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EDITORIAL NOTES.

THE A. M. A MEETING.

The annual meeting of the Association, held this year at Atlantic City, was remarkable only for the fact that it seemed to crystallize the general feeling of approval of those policies of the Association which have brought forth such a deluge of criticism from certain questionable quarters. The attendance was not so large as two years ago—not exceeding 4000. Probably the cold and rainy weather which prevailed had a good deal to do with keeping many members away. Work in the sections was quite up to standard (and that is saying a good deal) and in some instances was far beyond any previous effort. A symposium on Vaccines and Sera, in the Section on Therapeutics, was of remarkable importance and attracted a large attendance of the foremost men in American medicine. We shall hear more of this work in the future. Significant is the fact that in this Section, Dr. Edsall was elected Chairman and Dr. Motter Secretary; both of these gentlemen are and have been actively identified with the progressive work of the Council on Pharmacy and Chemistry. There was no suggestion of anything but the fullest approval and endorsement of the work of the Council; the various interests which have in previous years attacked the Council, were silent—it is to be hoped they may so remain. In the Surgical Section, the program was also a most valuable one and the tendency to put young men on the program is to be most highly commended. Dr. Charlie Mayo was elected Chairman of the Section in Surgery, which may be construed as an expression of esteem for him in the face of the very defamatory article which was widely circulated only a short time ago; and was so written as to make it appear as though it were an advertisement of the Mayos. There was probably a lot of Proprietary Association money back of this attack, but the Section on Surgery properly estimated its worth.

THE NEW OFFICERS.

When it came to the election of officers, there seemed to be even more than usual unanimity of opinion in the House of Delegates. There was no contest over any office save that of one of the Vice-Presidents, and in this instance the feeling was entirely friendly. Dr. William H. Welch, of Johns Hopkins, was the unanimous choice for President; he has served the Association for a number of years as a Trustee and has the confidence and respect of every member of the Association. Dr. Robert Wilson, Jr., of South Carolina, Dr. C. J. Kipp of New Jersey, Dr. Alex. Lambert, of N. Y., and Dr. Stanley Black of California, were elected, respectively, first, second, third and fourth Vice-Presidents. Dr. Frank Billings was elected Treasurer. Before the nomination for General Secretary, Dr. Smith, of Portland, Oregon, made a vicious attack in veiled language upon Dr. Simmons and the Trustees, voicing to some extent the antagonistic views of Lydston, recently promulgated at enormous expense to—whom? But Smith's was the only voice in that assemblage of 135, representing every state and section of our country, that criticized the policy of honesty and progress to which the Association is committed. After the re-election of Dr. Simmons, which brought forth vociferous applause and genuine enthusiasm, Dr. Smith retired from the room and was not seen there again. Doubtless he joined Dr. Lydston in the friendless obscurity of solitude; for be it known that Lydston was there, but scarcely a soul could be seen at any time, talking with him. Poor old Lydston! *Requiescat in pace.*

THE NEW TRUSTEES.

Last year three new Trustees were elected and this year three more new members were chosen; thus in a period of two years, six new members have been elected, a thing that has never occurred before in the history of the Association. But there is nothing in any way reactionary in this; rather, the new members are, if anything, more actively supporting the policies and the work of the Association. Dr. Smith, of Portland, is quoted as saying that in his opinion the House of Delegates was controlled by a "ring of about 80; and they were all present"! Now wouldn't that jar you! Imagine a "ring" of 80 out of 135 delegates! But that is merely incidental. Dr. T. J. Happell, who had been a Trustee for a dozen years or more, died a few weeks ago; to fill his unexpired term of two years, Dr. Cantrell, of Texas, was elected. The retiring Trustees were Dr. Welch, Dr. Porter and Dr. Harris. Dr. Harris, of Chicago, was re-elected,

and Dr. Dougherty, of Indiana, and Dr. Councilman, of Boston, were elected to fill the other vacancies. These men are all absolutely above question and each is distinguished among his fellows in his own section of the country. The mud-slinging, the abuse, will undoubtedly be continued; but do you think for a moment that men of the stamp chosen to be the responsible officers of the Association are going to do or be a party to the doing of anything that is not right, and honest and for the best interests of the Association and of the entire medical profession of this country?

PLACE OF MEETING.

The Delegates from California to the House of Delegates of the American Medical Association did everything in their power to secure the election of Los Angeles for the place of the next annual session; but it was not to be. Under instructions from our own State Society, they were active and persistent in their efforts but several things were against them. St. Louis was also out for the meeting and the middle-western contingent worked mighty hard for that city. They argued that it was central and would draw a very large attendance, a desirable thing owing to the comparatively small attendance this year as a result of the very bad weather. And, of course, the majority of Easterners look with horror upon a trip of more than twenty-four hours. So St. Louis was chosen. But the probabilities are that, should California extend an invitation next year, the Association will come to our state. It last met in California in 1894.

GATHER ENERGY.

Just because it is Summer time, and vacation time, don't let all your interest in and enthusiasm for your society work dissipate into thin nothingness. Remember that it is up to our medical organizations to see that the people of this state get proper public health laws and proper protection. We have got to do this work if it is to be done, and any one will grant that it should be done. Think about it this Summer and this Fall; find out who, in your vicinity, are going to be candidates for nomination to the legislature—and then see to it that they are properly educated in the matter of public health protection. Let them see just where the quack and the unlicensed, ignorant practitioner are a menace to themselves and their families; let them know just how an epidemic of smallpox or typhoid will hurt the whole community financially, and every single business interest in it. You can not begin this work too soon, for the political bee begins buzzing in the head of the office seeker very early; this Fall is the time to take up the work and keep it going until every possible candidate has been seen and talked with and has given his word that he will, if elected, vote properly upon all matters of public health legislation. And teach him, too, that there are always a few renegade physicians who will oppose the views and the recommendations of the united profession, for their own personal and selfish ends. For instance, all bills tending to create special boards of examiners for special cults are merely bills to license additional numbers of incompetents. All bills tending to lower (or change—for the proposed "changes" are always downward, when they are analyzed) present medical standards are supported by selfish interests—generally by those connected with schools of one sort or another that can not or will not comply with the required standards or teach medicine properly. This information should be imparted long beforehand, for when a man once gets to the legislature he is too busy to give much time to any one particular thing; it is better that he should know beforehand and should have promised to keep in touch with his county medical society and take his advice from that body. When you are taking your vacation this year, think about these things and gather energy for the campaign in the Fall. There seems to be no good reason why we should not have a pretty well posted legislature next session if we devote a little time and energy to the work. It is worth while.

TAKE A VACATION.

That is just what the Editor is going to do, and what he advises every one of you to do; take a *real* vacation, even if it is for only ten days or two weeks. Get away from all "shop"; don't think about anything medical; don't talk "cases" with any other physician; get away into the country, near to the inspiring voice in the soil and in the trees, and let Nature put new energy into you—new thoughts, new ambitions; broader plans and views. Take a real vacation of the mind and let yourself get out of the rut into which we all find our way by too steady and too narrow application. Take a vacation.

CRITICAL NOTES ON MELANCHOLIA AND OTHER MANIFESTATIONS OF THE DEPRESSION PSYCHOSIS.

By CLARENCE QUINAN, M. D., San Francisco.

A fairly extended experience with the acute psychoses, particularly melancholia, leads me to believe that a part of what passes among physicians for neurasthenia is nearly akin to alienation, and that formes frustes of mental disorders are more prevalent than we generally believe.

It is doubtful whether an adequate cause for this widespread mental instability may be discovered in modern conditions of living, though it is possible that crowding of population in large cities may conduce to psychic affections by lowering the general average of vitality. Were this the only cause we should be justified in concluding we pay too dearly for the manifold luxuries of twentieth century civilization; it is extremely probable, however, that indiscriminate crossing of vicious strains of human stock is the chief predisposing factor, and there is good reason to believe that this alone creates the psychopathic taint. Whatever the potential elements may be, at any rate, the fact remains

that in all levels of society there are unmistakable evidences of a neurotic undercurrent; trifling ailments with hypochondriacal exaggeration of some one symptom, somnambulism, localized anxieties, dissociations of character and so on to manifest unsoundness of mind. Morel wrote impressively of the degenerate types of his day, what would he say of our physical and mental shortcomings?

Of recent years there has been so much vague talk of things "functional" and "organic," of suggestive therapy and the like, it has seemed desirable to sift out the substantial facts of a single pure psychosis with a view to determine to what extent material and psychic elements intermingle.

The present paper lays no great claim to originality. In it I have assembled various data gathered during an enquiry into the literature of melancholia together with some personal observations. I have attempted a reconstruction of the clinical picture of melancholia by drawing freely upon the general literature of the subject without particular regard to academic border-line distinctions. As a suitable introduction to this, as far as possible I have brought together the principal facts which support an hypothesis of intoxication.

It is very difficult to add anything to existing facts. Indeed, the literature of alienation illustrates very strikingly the truth of the old saying there is nothing new under the sun. Thus, we find that even at the close of the French revolution, Pinel, Haslam and contemporary alienists, had observed and carefully grouped the essential phenomena of insanity. Since then, other leaders in psychiatry, Esquirol, Falret, the younger Pinel, Tuke, Sankey and Kraepelin have added much to our knowledge; alas, just sufficient to demonstrate the solidity of our ignorance. We are too apt to accept some metaphysical refinement as evidence of progress, forgetting that by this means we do not approach the ultimate cause. Lloyd, quoting Legrand du Saulle, says: "In spiritualizing insanity too highly we arrive at false medical consequences. It is not as a philosopher that we should study insanity but as a physician."

Though learned definitions of alienation are a staple product of psychiatry, practically nothing is known of the relation of insanity to the cortical cells. It is the Sphinx question of to-day. Naturally enough one shrinks from attacking a problem so difficult. In reasoning upon the phenomena of melancholia, however, may we not at least consider two very obvious possibilities, namely, first, alienation is independent of cell change expressing an abstract principle, and, second, alienation is due to a disturbance of the brain cells. It is natural to adopt the latter view as more nearly in harmony with modern scientific thought. In doing so, however, are we not well within the facts if we at the same time admit the probability that insanity is a status of intoxication, since cell deterioration at last is a chemical process? If this be conceded, it is evident that we confront two further possibilities. Either the active intoxicant is formed within the cranium, or, it is brought there from without, a product of some other part of the body. In other words, it is conceivable that insanity may reflect a local or a general intoxication. That it is probably not due to a localized cerebral process is suggested by the absence of mental symptoms in many instances of brain tumor, and by the fact that considerable portions of cortical substance may be removed without materially affecting the mind. Conversely, many facts support an assumption of general intoxication. For example, Esquirol's tables show, and it is the common experience, that death in melancholia is usually due to extra-cranial disease; again, gastro-intestinal disturbances, mal-assimilation and depreciation of general health always accompany this psychosis, and, finally, as Head has shown, symptoms of depression with hallucinations of sight and hearing are not infrequent in many visceral diseases.

Taking another point of view, it has been suggested by Dr. Brush that mental disorder may indicate the absence of certain elements indispensable to the welfare of the brain. This in turn brings up the question of heredity and with it the query, is there such a thing as congenital deficiency or absence of some internal secretion? Having in mind the phenomena of cretinism this possibility may be considered. But, the outspoken psychosis is usually an affliction of adult life. Manifestly, then, if full value be allotted to the congenital factor, melancholia must be regarded as the result of a cumulative general intoxication. Against this speak, however, the possible absence of all symptoms until the onset of the involution period, and, the frequency of spontaneous recovery from the most severe attacks at any time in life. We are forced to conclude, therefore, that if mental equilibrium be dependent upon some internal secretion, insanity does not indicate congenital absence of it but rather a temporary abeyance of function of the specific gland. Evidently, in a negative way this strengthens an intoxication hypothesis.

Of the various attempts to associate mental disorder and cell change, none has been very successful. Turner, it is true, found paleness of the giant and pyramidal cells of the cortex, granulation and disappearance of the central chromophile substance, and shriveling of the nuclei. And Orr, who partly confirmed these findings, states that the chromophile elements of the pyramidal cells show distinct rounding of their outlines, but adds that the degree of disintegration is not striking. He concludes: "If we take into consideration the fact that morbid changes are found in the nerve cells of the cortex and the posterior spinal root ganglia, and in the myelin sheaths and to a lesser extent the axis cylinders of the cord, and that the liver, kidneys and heart show definite alteration as well, we must come to the conclusion that all such alterations in the acute insanities are the result of an acute general intoxication." Evidently, then, if we view these histological findings in the proper perspective, we may conclude that no massive cell alterations have been discovered in any portion of the cortex; that,

on the contrary, even in very severe and prolonged melancholia no characteristic cell change occurs, at least, none free from the objection that it might have been caused by post-mortem conditions.

A few additional references will serve to demonstrate the lack of uniformity in pathological reports. Thus, Athanassio, in fifty necropsies observed "anaemia of the encephalic centres, excess of cerebro-spinal fluid in the ventricles, and oedema of the pia, arachnoid and cerebral substance." He thought the oedema especially characteristic of stupid melancholia.

Hollander concluded that melancholia is a manifestation of a morbid condition of the cortex in the region of the parietal eminence, because fear is produced in animals by stimulation of this area and melancholia, he thinks, should be regarded as a pathological status of that emotion. He points out, further, that this region is in close relation with the sympathetic and vaso-motor systems, both of which are usually implicated in melancholia.

Finally, Rayner indulges the vague belief that "there is an intimate connection in the cortical physical substrata of mental states even when presenting widely differentiated emotional and volitional symptoms."

Taken all in all, these incongruous statements justify us in concluding, provisionally, that melancholia runs its course without any characteristic alteration of the cellular elements of the brain; certainly none which may be regarded as definitely pathognomonic.

A statement of Dr. Loeb's now becomes interesting and perhaps relevant. In discussing the physiology of the brain he says: "It is my opinion that these histological or corpuscular hypotheses of the images of memory must be supplanted by dynamical conceptions." Obviously, by our line of reasoning we drift towards the same conclusion. From this point of view, melancholia appears to be the result of an intoxication, and it is quite likely that the final elucidation of its cause will come from the physical chemist. Instead of an obscure morphological enigma, it is not improbable that we may have alone to do with certain physical or chemical properties of the body fluids.

A few contributions are available which throw light upon the mechanism of intoxication.

D. Abundo and Agostini state that the intestinal mucosa, which they regard as a natural barrier to toxins, may be directly weakened by mental shock or fright. There are certain mental conditions, according to these authors, which "so modify phagocytic action and therefore resistive power that this line of defense is broken down."

Mabille, on the other hand, in a masterly thesis proved that partial sensory paralysis of the alimentary canal is frequent in melancholia. He thinks the aversion to food so common in this psychosis is a logical result of blunted sensation. As he expresses it, "this state of anaesthesia prevents assimilation, lowers vitality, and, in spite of the ingestion of food in sufficient quantity, may give rise to a persistent feeling of hunger." The observations of Semelaigne, Toogood, Ziehen, Kirchhoff and Bruce may be mentioned as in a general way confirmatory of his view. That the anaesthesia of the periphery, which in greater or less degree characterizes the psychoses, should find its counterpart in the gastro-intestinal canal is not surprising. That it may be a factor of preponderating influence should be remembered in reading Rayner's query regarding the mode of origin of the abeyance of appetite. "Does it arise," he asks, "from peripheral anaesthesia, from lowered nutrition, from defective transmission of impressions from the periphery, from neural defect, or toxic conditions affecting the pneumogastric center, or combinations of these?"

Charrin sought to prove that melancholia indicates hepatic disturbance. The idea was of course not original with him, many writers having noted points of resemblance between certain forms of liver disease and the clinical picture in stupid melancholia. For example, Esquirol said, quaintly enough, "Il est certain que le mot mélancolie, méme dans l'acception des anciens, offre souvent á l'esprit une idée fausse, car la mélancolie ne dépend pas toujours de la bile."

Leopold-Levi, Klippel, Dufour and Cololian believe with Charrin that mental disease is intimately related to liver disorder. The first two observers based their views upon a few observations of seeming mental deterioration with hallucinations and delusions occurring as terminal events in atrophic cirrhosis of the liver. The conclusion they reached, however, seems hardly warranted by the facts.

Cololian called attention to several points of resemblance between cholemia and melancholia. He emphasized especially the common occurrence of periocular pigmentation, besides other pigmented spots on the face, trunk and limbs. In both conditions, the blood serum, he assures us, gives the reactions for bile pigment, the inner surfaces of the hands and feet are yellowish, and, finally, "la malade á tres facilement la chair du poule." There can be no doubt of the suggestive interest of these observations on the importance of an hepatic factor in the etiology of melancholia, but further research is needed to make the relation more definite.

The experiments of Townsend show that indoxyl elimination is greatly increased in the depression states. It will be seen, however, that an excess of this body in the urine merely indicates an abnormal proteolytic status in the intestine.

Finally, Haig as well as Lange insists upon the evil propensities of uric acid. According to them, melancholia indicates an excess of this purin acid in the blood.

If a single conclusion may be drawn from these various statements, it is that mental equilibrium in some way is intimately related to the metabolic activities of the abdominal viscera. Whatever may be the precise influence of heredity in the causation of insanity, therefore, we may presume it has to do with the specific cell energy of the abdominal organs. In some way the balance of power is disturbed. As Head puts it: "That barrier which

the normal mind sets between conscious life and that of the viscera, the integrity of which depends on a high potential of vitality in the nervous system, has been broken down." That there is wisdom in this belief none conversant with the phenomena of alienation shall doubt. So far back as 1765, Larry said, according to Roubinowitsch, that "one is born a melancholic." Whether or not we are prepared to endorse this opinion, it is hard to evade the conclusion that this psychosis represents a status of intoxication to which pre-natal influences may or may not contribute, and that, in appraising the resources of a patient afflicted with melancholia, we may feel certain that in proportion as visceral impressions invade the field of consciousness, the co-efficient of vitality is low.

Those who wish to inform themselves more fully concerning the pathology of melancholia, will find various phases of the subject discussed in the papers of Albrecht, Hearder, Ziehen, Johnstone, Marce, Devay, Oppenheim, Vassale, Dees, Pinel and Saury.

The Symptoms of Melancholia.

Before taking up in detail the clinical picture of melancholia, it should be understood that this psychosis is often described as the depression phase of manic-depressive insanity. Under this term Kraepelin and his followers believe we should unite certain mental states which hitherto have been regarded as wholly unrelated. The ground is taken that both depression and manic excitement are interchangeable or alternate phases of the same process, and very likely have a common physical substratum. According to this view, the two phases, though seemingly antithetical, are never completely dissociated, each so modifying the other that pure uncomplicated forms do not occur. This view has received the sanction of many authorities. As a consequence, in recent text books, the word melancholia has been superseded to a great extent by the new term. We would be in error, however, were we to regard the change in nomenclature as indicative of an extension of knowledge. As a matter of fact, the germ of the idea was embodied in Pinel's definition of melancholia, published in 1802. That he recognized the essential facts and appreciated the relation is evident. He describes the disorder in the following words: "Délire exclusif sur un objet, ou série particulié re d'objets; nul penchant á des actes de violence que celui qui peut étre imprimé par une idée dominante et chimerique; d'ailleurs, libre exercice de toutes les facultés de l'entendement; certaines fois égalité constante d'humeur, ou méme état habituel de satisfaction: dans d'autres cas habitude de l'abattement et de la consternation, ou bien aigreur de caractére qui peut étre porté jusqu'au dernier degré de misantropie."

Melancholia does not come full fledged into existence. On the contrary, it is the culmination of a series of events which mark the gradual disorganization of the faculties of judgment. We must reckon with hereditary predisposition and the insane diathesis. Experience shows that a certain lability of psychic equilibrium is characteristic of those individuals who subsequently fall victims to mental disease; there will be evidences of hypersensitiveness, of excessive reaction to slight psychic stimuli coupled with deficient inhibitory power. This is the insane diathesis; a neuropathic tendency which expresses the deadly element of heredity. Fortunately, though all members of a family may present signs of instability in one way or another, the mental disorder usually fastens on a single member, though Wiglesworth has recorded four instances in a single family. The psycopathic individual from childhood has peculiarities which distinguish him from his fellows. He is egotistical, impatient of restraint, of violent temper and yet an arrant coward in the conflicts of boyhood. Often he is thought to possess unusual gifts because of much reading and a habit of aloofness, but, in a majority of instances, it will be found that he is incapable of constructive thought, and he is usually an indifferent performer in mathematics. A lack of proper vitality shows itself in many ways; for example, in deficient capacity for sustained physical effort, in attacks of tachycardia after slight physical and emotional excitement, and a tendency to motiveless laughter. Clouston says the first motor sign of the instability of any brain is an inclination to convulsions during the first dentition. We may go farther and say that at any age the conspicuous over expenditure of energy in performing an act is a suspicious circumstance. Kraus has shown that too much dependence has been placed on the degenerative stigmata. He quotes Talbot as saying that an individual is not a degenerate who possesses only one deformity, but those persons who have three or four may be considered such.

The probabilities are strong, then, that for years in individuals who finally succumb to melancholia, a process of incubation goes on unperceived. It is in this pre-melancholic period that visceral impressions intrude themselves, and by degrees modify conscious life. At last some physical or mental disturbance supplies the necessary impetus and determines a mental crisis. Thus, Dees relates the history of a woman who became melancholic from association with her insane husband. As she complained of ringing in the ears and pain in the left temple, an aural examination was made, and a large plug of cerumen was removed from the left ear. Within four weeks she was fully restored to health. Hearder reported an analogous observation. His patient, a man of fifty afflicted with acute melancholia was operated on for the removal of a lipoma. Excision was followed by complete recovery from the mental trouble.

As might be anticipated, symptoms referable to the abdomen are rarely absent. Usually, through a number of years it is possible to trace a history of obscure gastro-intestinal troubles; attacks of "gall stone colic," for example, are said to follow indulgence in some particular food, or, without any very definite cause, painful spots appear in the belly. If, however, during one of these seizures a physician be summoned, the pain will often lessen or disappear shortly after his arrival. Another syndrome of an

indefinite character is often encountered. The principal elements in this are constipation, painful sensations here and there in the abdomen, various degrees of dyspepsia and a vague feeling of uneasiness referred to the intestines. Very likely a tentative diagnosis of "obscure functional trouble" is made by the medical attendant and perhaps arteriosclerosis is mentioned or the possibility of ptomaine poisoning is considered. A peculiar depression which manifests itself at this time is either overlooked entirely or else is attributed to "neurasthenia" and so neglected. To the discouragement of the patient, moreover, the constipation and abdominal distress continue unabated in spite of various therapeutic measures. Months later, without any treatment the symptoms gradually disappear and, simultaneously, marked improvement is noted in the general health. It very often happens that some healer reaps all the credit for the restoration. Curious anomalies of appetite are usual. Complete aversion from food is an occasional manifestation and in general the appetite is capricious. Although as a rule light eaters, instances of downright gluttony are not rare particularly when the psychosis is fully established. Among other symptoms which may appear from time to time are dryness of the throat with difficulty in swallowing, abnormal fermentative conditions, and the ever present costiveness. Perhaps these one and all are due to some mural defect of the gut or a disturbance of the osmotic mechanism. At any rate, there seems to be a faulty hydrostatic adjustment, some anomaly in the distribution of fluids in the epithelial wall. We recognize this tacitly by ordering frequent small amounts of fluids for melancholic patients.

Insomnia is rarely absent and is much to be dreaded. Often there is a history of wakefulness extending as far back as the patient can remember. It is the most formidable and refractory symptom of melancholia and its proper control is one of the serious problems of treatment.

Evidences of vaso-motor instability are seldom wanting. Under the influence of emotional excitement especially if there be an admixture of fear, the hands get cold and clammy. At other times they are mottled in appearance and purple or red in color according as the surrounding temperature is cold or warm. The palms sweat easily. A patient described by Schule had, in addition to the vaso-motor spasm, pressure tenderness of the sixth cervical vertebra.

As the psychosis gains ground localized anxieties come gradually into prominence. Any visceral sensation may now become established in a position of central importance. By far the most common, however, is the so-called pre-cordial fear,—the Precordialangst of the German writers. It is an indefinite feeling of anxiety referred to the precordia, often associated with attacks of palpitation of the heart and violent pulsation of the cervical vessels. The anxiety is usually continuous but not of uniform intensity. It is most annoying in the morning hours. While it lasts the precordial region may be hyperaesthetic to such an extent that even the pressure of the clothing is unpleasant. Fears referred to the abdominal viscera take the second place in point of frequency. There are two fairly distinct groups. Of these, one, characterized by pain, is referred by the patient to the appendix and gall bladder regions or in general to the right side of the abdomen. The second group is more definitely associated with the intestines. The most extraordinary statements are made by patients concerning their visceral sensations. Thus, a patient of Cotard's affirmed that she had no chest, stomach nor bowels; nothing remained of her disintegrated body but skin and bones. Seglas reported the case of a young woman with a similar delirium of negation who was firmly convinced that she had no heart. A number of such observations are recorded in the interesting contribution of Vallon and Marie. There can be no doubt that these morbid fears, when no very obvious mental symptoms accompany them, are frequently misinterpreted with the result that serious operations are performed, especially laparotomies, in quest of lesions which never existed. These unfortunates talk in the most logical and convincing way about their various ailments, and in the absence of any suspicion of mental aberration, sometimes their statements gain credence and action is taken.

The characteristic attitude and facies of melancholia manifest themselves gradually. When the psychosis is at its height the patient remains immobile for hours, often opposing a resistance which appears to be voluntary to all efforts to make him move or speak (Delasiauve). All movements are executed slowly and painfully. The legs are stiff and in walking the gait is spastic and awkward. Soon after the onset of the malady the normal hue of health gives place to a peculiar muddy pallor and the skin assumes a mottled, unhealthy look, with at times a definite icteroid tint recalling the appearance in certain liver affections. The face is pale and cyanosed, the eyes cast down, the glance fixed and distrustful, despondency expressed in every feature. It is a true mask corresponding to no human emotion. Sikorsky has shown that all the muscles supplied by the lower division of the seventh nerve are relaxed. As a consequence, there is a drooping of the angles of the mouth, the oral opening is scarcely closed and the naso-labial folds are nearly effaced. The persistent contraction of the frontalis muscle is frequently a conspicuous sign, and this, in contrast with the immobility of the lower part of the face, imparts a peculiar look of age. The characteristic frown appears in response to any stimulus, whether it be a pin prick or the mere asking of a question. According to Kirchhoff, the intermarginate spaces are somewhat narrower than in health, and as the lachrymal secretion is greatly diminished, the eyes look dull and expressionless. Anomalies of sensation may usually be detected as Semal and Bechterew have shown. Modification of the tactile and pain senses are most frequent, and careful examination will usually disclose paraesthetic areas.

The voice is altered both in timbre and volume. It is low, feeble and monotonous. As Semelaigne puts it, "one scarcely hears the words which expire on their lips." Complete mutism is a frequent symptom and may persist for days at a time. Voisin relates an instance of mutism of several years duration, followed by sudden recovery of the voice as the result of fright or strong emotion. On occasion, the speech may have an explosive quality suggesting imperfect control of the executive mechanism. Parant believes that a tremulous tongue is a constant symptom of melancholia.

A complete account of the mental phenomena of the depression psychoses shall never be written. One might as well attempt to circumscribe a disordered imagination, for the insane delirium implicates every expression of human emotion. It is not matter with which we deal, but thought; a thing infinitely elusive. For practical purposes, therefore, it will suffice to outline the more prominent manifestations.

As the depression which dominates the chief stage increases, the patient becomes morbidly introspective, antisocial and much given to self-accusation. As a rule there is a central melancholic idea, but of this he is very reluctant to speak and even the most tactful inquiry will often fail to reveal it. Frequently he becomes suspicious of those with whom he comes in contact, questions the motives of his best friends and is prone to believe that plots are being hatched to his undoing. The various somatic anxieties now become more and more harassing and add a disquieting element to the mental status. They always greatly increase the perplexity and misery of the sufferer, and are a constant source of worry and apprehension. The self-absorption is complete. The power of attention is enfeebled to such an extent that he can read but a few minutes at a time, and he is quite incapable of following a sustained line of thought. The delay in the association of ideas is usually very striking though beyond a manifest obscurity of judgment the train of thought is often not irrational. It is a reasoning delirium. Constantly in the background is the conviction that he is guilty of some frightful moral shortcoming. Delusions and hallucinations make their appearance. Poverty is impending, he will tell you, or a rupture is imminent in his family; his wife is unfaithful, for example, or quite likely he fancies himself desperately in love with some imaginary being. There is no limit to these strange vagaries of the mind. An excellent graphic description of the genesis of an hallucination of hearing has been written by Maudsley. Step by step he traces the evolution, from the first intrusion of a blasphemous thought, to the final stage when the words become as distinctly audible as though spoken by someone. Among the authors who have made important contributions to the literature of the delusions and hallucinations of insanity are Marce, Kiernan, du Motel, Bayle, Cullere, Chase, Lewis and Foville. Most of these writers deal with the subject from the purely metaphysical side. Chase, however, believes that a delusion takes its origin primarily in a perversion of the vital feelings rather than in a derangement of the intellectual activities of the mind. This is interesting because it is consonant with Head's belief in a predominant visceral factor, also it seems to indicate the possibility of a logical connection between mental manifestations and autointoxication. It is the mysterious element, the tincture of the supernatural in such perversions of the normal faculties that lays so strong a hold upon the imaginations of those who attempt a scientific explanation. Hauptmann has shown that the dramatic possibilities of these states may be taken advantage of, in a recent play which illustrates very well how readily the phenomena of insanity pass current as evidence of superior understanding or spiritual enlightenment. An interesting and unusual phenomenon worthy of mention in this connection has been described by Foville in writing of the peculiarities of hallucinated melancholics. Occasionally, it seems, these unfortunates as the result of a systematized delirium, wander from country to country either to avoid persecution or to obtain honors denied them at home. A number of these so-called "wandering Jews" who have circled the globe, rivaling Eugene Sue's famous character, may be seen at the Salpetriére in Paris.

Distortion of the normal emotions is one of the dreadful symptoms of melancholia usually present throughout the chief stage. Every familiar sense impression becomes painful. The mother shudders at the touch of her child; she no longer loves and even dreads to hear the voice of her husband; the slightest sound, if familiar and related to the daily events of the household, now may give rise to the keenest suffering. Curiously enough, though the presence of those near and intimate increases the distress of the sufferer, any effort to bring about separation will meet immediate and violent remonstrance. It is really amazing what a wild demonstration will be made under such circumstances by even the most sedate woman. It is impossible to exaggerate the difficulties which present themselves when isolation of the patient is attempted. The determined opposition of the family may be counted upon. Until the last minute they cling to the victim, prolonging the crisis by their well meant obstinacy. An awakening comes one day, however, perhaps a tragic one; an attempt at self-destruction accomplishing in a moment what no amount of persuasion could effect. We should thank Tuke for censuring those physicians who by euphemistic titles gloss over what is in reality insanity and unsoundness of mind, for there can be no doubt that medical men are to a certain extent responsible for the hostile attitude of the laity in matters of this kind.

About sixty-five per cent of all melancholics betray a definite suicidal tendency. Frequently, by a little adroit questioning, a confession of meditated suicide is obtained even from those patients in search of relief from some fancied ailment, who commonly are designated as neurasthenics. A conviction that life is no longer worth living appears to be the strongest impelling motive. In other instances life is taken in obedience to various imperative ideas; some interior voice commands the deed. Yielding to

sudden impulse is relatively a less frequent cause of suicide. To this last is related in some way the fear of self while on high places, and that self-distrust which is experienced in the presence of a deadly weapon. Bourdin's studies in self-destruction led him to the conclusion that it is invariably the result of a disease process. According to Ziehen the danger is greatest when the depression is accompanied by anxiety. It is necessary to make a distinction between genuine attempts at suicide and those spectacular imitations which are undertaken in the effort to create additional sympathy. The homicidal impulse is comparatively rare. Zenker, however, relates the history of a woman who attempted to cut her husband's throat during the night. That the attempt was not the outgrowth of malice was shown by the fact that very slight injuries were inflicted though the weapon employed was a huge butcher knife. According to her own statement she wished to punish him for his ill treatment of her. In rare instances, auto-mutilation is practiced. Martineuq reported the case of a woman who plunged a compass needle into her abdomen, and tore out her right eye with a portion of the optic nerve adherent; in spite of these dreadful injuries, however, she made a good recovery.

A few of the more unusual complications of melancholia may be mentioned. Ziehen noted in three different patients unilateral facial paralysis which he was forced to regard as symptomatic of severe melancholia; in two of them, asymmetry of the face persisted after recovery. In two other instances he observed bilateral insufficiency of the internal recti, and paresis of the oral muscles.

A patient of Tomlinson's had the usual tabes syndrome though the subsequent history revealed no organic trouble.

Finally, Oppenheim has recorded the occurrence of choked disk in a melancholic patient.

Prognosis.

The duration of melancholia is extremely variable. Probably the two most important factors to be considered are age and hereditary predisposition. Inferences drawn from statistics alone are not generally applicable. In private practice a large number of incipient cases are treated which never manifest the typical depression and yet must be included in this category. Asylum material, on the other hand, only includes fully outspoken forms of the malady. For this reason, statements as to the percentage of recoveries vary widely. From the reports of Gucci, Farquharson, and Weir-Witchell, on asylum results, and the opinions of Mairet, Griesinger, Guislain and Krafft-Ebing, we may conclude that recovery takes place in young individuals with the acute forms of melancholia in about sixty per cent; that is, about that proportion recover and remain free from relapse. Some authorities place the percentage of recoveries much higher, affirming that fully ninety out of one hundred patients get well. Under ideal conditions perhaps the percentage may be placed at ninety or even a little higher, but fully twenty per cent of these subsequently relapse. The prognosis of the relapse does not differ from that of the original attack. It is well to bear in mind Guislain's dictum: "Out of one hundred recoveries, eighty at least are due to spontaneous return of the normal state, under the moral influences of calm, tranquillity and well being with which they are surrounded. Medicine, revulsive, depletive and other, succeeds in but fifteen, and the remainder owe recovery to alimentary regimen and hygienic means in general." Melancholia in the involution period is of bad prognosis. Gradual progress towards recovery is of more hopeful outlook than sudden improvement. The best evidence of the re-establishment of the normal is the awakening of the patient to a full realization of his former state, the parting with all its delusions, and the impartial estimation of the present position from every point of view (Griesinger). Early recognition of the psychosis and prompt isolation of the patient, were they possible, would doubtless shorten the duration of the disease which in mild cases varies from four months to a year; chronic cases may last much longer and recovery may be expected even after a term of years.

Treatment.

At the earliest possible opportunity it is advisable to remove a melancholic patient from familiar scenes and surroundings in which he may indulge his morbid cravings for sympathy. If, however, in exceptional cases, it seems expedient to undertake treatment at home, a quiet room must be chosen, all unnecessary articles of furniture removed and preparations made to keep the patient incommunicado for an indefinite period. The chief danger to be apprehended is from suicide and one of the principal arguments against home treatment is the difficulty of providing sufficient safeguards against this calamitous event. Treatment in a properly conducted institution is, therefore, always to be recommended. The genius of treatment consists in reducing mental activity to its lowest terms. In pursuance of this object it is necessary to exclude every possible sensory stimulus and reduce the emotions to their lowest forms of expression. When voluntary diversion is impossible we must resort to the lowest of all, that is, sensory; ice packs, for example, and electrical treatment. "The most careful and exhaustive inquiry into the feelings and ideas of the sufferer is absolutely necessary. Until we have discovered the fundamental melancholic idea complete confidence is not gained and the physician's personal influence for good is greatly weakened" (Rayner). The same writer warns against the invocation of religion and regards suggestive treatment as dangerous. Intimidation should never be attempted. Close attention to the diet is of the utmost importance. The attending physician should satisfy himself each day that a sufficient quantity of food has been taken. The diet should include abundance of fluids, preferably milk. In exceptional cases when food is refused the nasal tube must be employed. When necessary, the tube should be introduced rapidly and in silence, a number of assistants precluding all possibility of successful resistance. In attempting to procure sleep the use of drugs is to be avoided as far as possible.

The desired end may often be reached by purely physical means; of these, the prolonged tepid bath is sometimes effective, and electrical treatment is occasionally of service. Sulfonal and paraldehyde are perhaps the least harmful of the somnifacients. The general principles of treatment here enunciated apply with equal force to those individuals who betray a tendency to periodic fits of depression together with other manifestations of the insane diathesis. These unfortunates require uncommunicative attendants and are ill adapted to the well meant but misdirected efforts of Christian Science and Emmanuelism.

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BACKACHE.

By C. M. COOPER, M. D., San Francisco.

(Continued from page 227, June Journal.)

Is there any general disease that is wholly or partly responsible for the backache? We have already referred to this subject, and have noted the occasional value of strophanthus and of iron compounds, and why they relieve some backache, and aid in the relief of others.

Special Backaches—The post-operative backache is situated in the lumbar region and is often very intense for 48 hours after operation. No matter what the nature or the location of the operation, it almost invariably ensues if the patient is operated upon in the supine position.

Dr. Somers tells me this backache does not follow operations in the lithotomy position, and those operating upon prostatic cases in the exaggerated lithotomy position inform me that their post-operative pain is chiefly over the buttocks and down the thighs.

Dr. Krotoszyner writes me that only 5% to 10% of the patients operated on by him under spinal anesthesia exhibit post-operative backache, and these he ascribes to bad technic.

There seems to be good reason then for believing that this backache is due to poor support of the lumbar arch when all the muscles are totally relaxed during anesthesia. The strain on ligaments and fascia is naturally intensified and backache ensues. If this be so, a triangle under the thigh and leg and, if necessary, pillows under the shoulders which serve to bring the whole length of the spine in contact with the table, should prevent this backache and Kelly states that it does.

The backache that arises in women during the night, often appears to be due to a similar want of

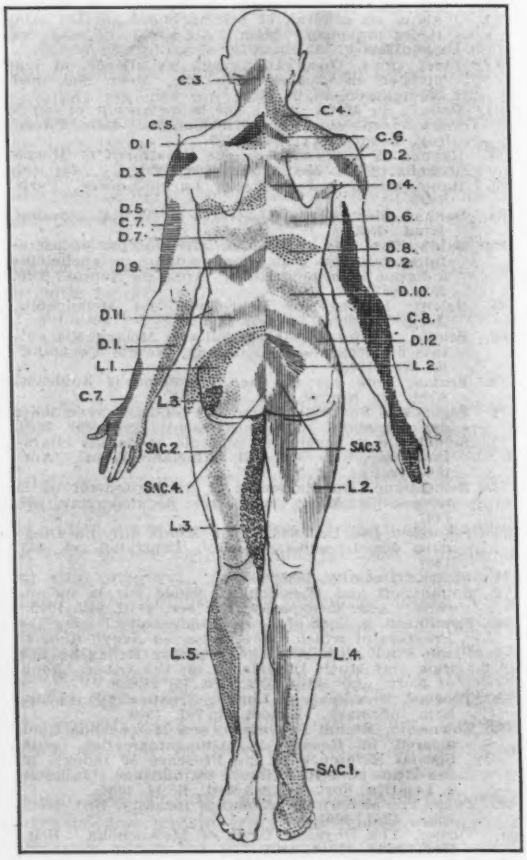

Fig. 22—This figure shows segmental cutaneous areas. The several dorsal, lumbar, and sacral areas are indicated each by the initial letter followed by a number. (After Head.)

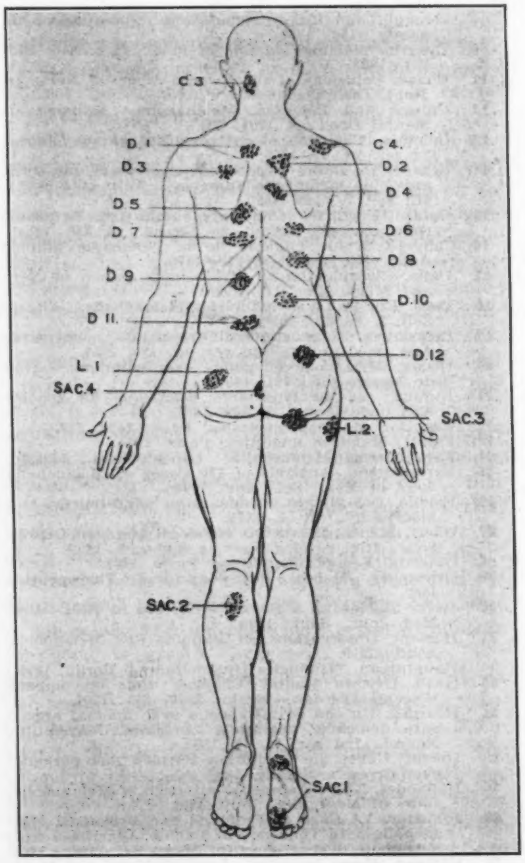

Fig. 23—This figure shows the "maximum spots" (seats of most marked tenderness and pain) of the different areas. (After Head.)

Heart—3 C, 1-2-3-4-5-6 Dorsal segments.
Lungs—3-4 C, 1-9 Dorsal segments.
Stomach—6-7-8-9 Dorsal segments.
Intestine—9-10-11-12 Dorsal segments.
Rectum—2-3-4 Dorsal segments.
Liver and Gallbladder—7-8-9-10 Dorsal segments.

Kidney and Ureter—10-11-12 Doral, 1 Lumber segments.
Prostate—10-11 Dorsal, 5 Lumbar, 1-2-3 Sacral segments.
Testis and Ovary—10 Dorsal segment.
Appendages of Uterus—11-12 Dorsal, 1 Lumbar segments.
Uterus—10-11-12 Dorsal, 1 Lumbar, 3-4 Sacral segments.

support to the lumbar arch during sleep. A similar arrangement or a pillow under the loins, will often be successful in relieving these patients.

Surgeons and dentists backache. Many surgeons and dentists suffer from backache during their work. It is probably due to the fact that when the busily thinking surgeon or dentist is energizing the muscles of his arms and hands in the finer movements, his back muscles are relaxed and cease to give their accustomed support to the ligaments and fasciæ, and so backache ensues. The remedy consists in following Dr. Stillman's advice and practice. Raise the right leg and place the right foot on a stool. The lumbar spine is thus partly unarched, and the strain taken off the stretched ligaments.

There is a backache which men complain of when waiting for their wives to finish their shopping, and which a woman suffers when waiting for another woman to complete her uninteresting bargaining. In other words it arises in that state which the individual, in American slang, well defines with the remark "you make me tired." Here again we believe this backache to result from imperfect cerebral innervation of the back muscles. ligamentous and fascial strain resulting. The remedy consists in avoiding the cause, or in preventing oneself from getting "tired," or worried or despondent, in other words the treatment is psychical, and indeed discipline and training will be of great service in the treatment of many of the different kinds of backache that we have enumerated, inasmuch as it will immensely improve the cerebral innervation and tone of the muscular system generally.

The hysterical backache you are familiar with. The lady patient tells you in her quite gentle way with closed eyes and quivering lids of the intense back pains which she suffers. As you touch the skin and spines of the vertebræ she shrieks and recites the many queer sensations that she endures, but yet is unable exactly to define or locate. And when you have successively drawn her attention to other regions you can surreptitiously almost break her previously painful back region without complaint. The treatment is rest and education.

Coccydynia—In neuralgic complaints round the coccyx the nervous system must be thoroughly examined to exclude the presence of a lesion of the cauda-equina, the sacrococcygeal joint, and the coccyx must be palpated through the rectum, the rectum examined with the proctoscope, and the sacrum and coccyx structures investigated with the X-rays. If no lesion be found the pain is regarded as due to neuralgia, and removal of the coccyx may be called for. Even then the pain may persist. In case of a definite disease in this locality, the lesion as found must be dealt with.

In conclusion I would add that the successful interpretation of cases of backache is often difficult, and demands wide clinical knowledge, and often a thorough investigation of many organs with the instrumental methods of diagnosis.

SOME FALLACIES IN THE WEANING OF INFANTS.*

By ADELAIDE BROWN, M. D., San Francisco.

The following conclusions in regard to the breast feeding of infants have grown upon me during fifteen years of private practice and ten years of hospital work on a maternity service:

First—That every mother, with rare exceptions, *can* nurse.

Second—That factors outside her physical condition do much in many cases to reduce her ability to nurse.

Third—That even one breast feeding a day has nutritive value to the child.

Fourth—An insufficient quantity of human milk is no indication for weaning, as it can be easily supplemented and the medical and nursing profession can show many cases of difficult substitute feeding traceable to the doctor or nurse saying, "It is not safe to mix mother's and cow's milk."

These points I wish to take up in order. A general statement is made in many prominent places medically, in journals, text books and from the medical lecture platform that modern women do not nurse their children, the argument being completed by saying the further the intellect is developed, the less completely are physical functions developed, and also that the love of the child is less ardent and modern women are anxious to be rid of the drudgery of lactation. That this is an argument with scant facts to uphold it, the following records of 80 consecutive cases from the Alexander Maternity and 60 cases from my private practice, occurring in the last eighteen months, will go to show. Neither of these groups come from the peasant class, but both represent the better class of American women, many with advanced education and great refinement.

From the Alexander Maternity: These cases were under a number of different physicians, but the babies under the nursery regime, apart from the mothers. In the 80 cases there were 52 primaparæ; 50 mothers nursed entirely; 30 mothers nursed with some supplementing; one baby was on bottle entirely. The use of a formula was occasional in a few and alternating with breast feeding in many of those given formula.

The group of 60 private cases contains no woman under 25 years of age, 33 over 30 years of age. I mention this because lactation is supposed to be more active in younger mothers. There are 23 primaparæ. Of these 60 women, 42 nursed their children completely. It has been my custom to allow one bottle a day after four weeks of age. This has two points of advantage: the child is accustomed to taking food from the bottle, is accustomed to digesting cow's milk, and the mother is enabled to be away from it for her own personal pleasure for a four or five hour interval in the twenty-four hours. Ten women nursed their babies with the addition of more than one feeding a day from the bottle. Bottled from birth, five cases, two due to flat nipples

* Read before the Cooper College Science Club, April, 1909.

(the same mother), one due to such feebleness on the part of the child that it could not nurse, one due to albuminuria with pyelitis in the mother, and one mother absolutely refused to nurse the child. After six weeks' nursing two babies were weaned because the mothers hated nursing. One child offered some problems in infant feeding, two babies were weaned because the mothers thought it better not to supplement breast feeding with the bottle; they were weaned without the advice of a physician and with no medical guidance, and both of them had great difficulties and later were for months under medical care on artificial food. Two babies were weaned under medical guidance after six weeks' nursing; they both flourished. In this group are two multiparæ, one of 41, her youngest child 16 years of age; the other 33, her first child five years of age, who nursed well under some encouragement, though neither had ever nursed before. Lactation failed in this group of 60 cases in six cases; one due to a physical abnormality on the part of the mother, one due to a pathological condition, one the feebleness and inability of the child to nurse, and three coming under the typical argument that women will not nurse.

The second conclusion has been forced upon me from the results of separation of mother and child at the Alexander Maternity and a course pursued for many years of setting aside a room for the mother and one for the baby and nurse in private houses. The quiet sleep thus secured to the mother does much to accelerate her convalescence. To the woman whose sleep has never been broken it must be wearing to be awakened by each cry of the baby in the first days of its life. After ten days, regular habits are established, but many hours of sleep have been lost to the mother who has to share her room with baby and nurse. It does not take palatial quarters for this arrangement; it can be done in a three-roomed apartment as well as in a ten-roomed house, but it takes foresight and explanations from the doctor or nurse to convince the patient of its value.

In these days of emphasizing the importance of suggestion, much can be said for its influence on the function of lactation. A careful examination of breasts and nipples should be part of every preliminary examination of the patient; many defects of form of the nipple can be improved during the last two months of pregnancy. Though I have never been convinced that local applications to the nipple during pregnancy were helpful as a preliminary to lactation, they are often used at my suggestion, as I am sure it helps a woman mentally to feel she is doing all she can to make lactation possible and obviate its discomforts.

A third factor to helping a woman to nurse is the attitude of the nurse. Many trained nurses feel that the baby is easier to manage on the bottle and are exceedingly critical of the mother as source of supply, attributing each normal cry of the baby to colic and therefore to indigestion. It takes only about forty-eight hours of this regime to reduce completely the supply. In the hospital where the mother is fretting because she is sure that she has not enough milk or the nurse *thinks* she has not enough, we find weighing the child before and after nursing serves as an encouraging observation to the mother, and an instructive one to the nurse. We also offer the child a bottle after nursing and judge by how much it takes in a day after each nursing whether it is satisfied. The gain in weight daily also solves the question for the fretting mother.

Fourth—The value of human milk in infant feeding needs no confirming word from me. Much has been done to improve methods of substitute feeding, but when the last word has been said, even a small quantity of mother's milk renders substitute feeding relatively easier and for every child the last drop should be saved; even one breast feeding a day has nutritive value to the child, as the following case illustrates very well:

Nov. 20th, 1908, Baby B., three months of age, was brought to me. Its weight at birth was six pounds eight ounces; at three months, stripped, its weight was six pounds fifteen ounces. The mother said she had had a great deal of milk, but the nurse thought it was not rich enough so put the baby on Eskay's food, etc. By the time it reached me it had run the usual gamut of foods, modifications and formulas, the latter evidently being used in accordance with its age and not its size. The child was put into the nursery at the Alexander Maternity, handled as a new-born child, fed one or two breast feedings a day as we could get them and at the end of six weeks, two weeks after returning home, it had gained three pounds six ounces. It now at seven and a half months weighs fourteen pounds four ounces. We noticed that whenever this child had no breast milk for twenty-four hours it was constipated. After returning to its home a neighbor with a baby one month older nursed my patient once a day, and the effect on its bowels was the same. Now that the child rolls and creeps its bowels are normal. What the record of this child would have been had a supplementary feeding of fats if the mother's milk was poor in fats or the proposition of longer intervals between feedings, etc., for colic been given a trial before weaning was insisted upon, we can not tell but at no point, under rational feeding, did the child offer the slightest problem and its progress has been uninterrupted throughout.

This leads to the last and principal point of this paper, that an insufficient quantity of human milk is no indication for weaning, as it can be easily supplemented, and if an insufficiency occurs in the first three weeks a natural increase comes about with the return to health, exercise and a full diet on the part of the mother. As long as the baby gains, eats regularly at proper intervals and sleeps well, *it should be nursed.* When it ceases for a week or two to gain, or demands feeding before the proper interval has elapsed, or if it wakes up often at night, a supplementary feeding of one to three bottles should be given. I have seen an order for two bottles a day followed by a gain of one and a half pounds in a week after a child had made no gain on breast feeding alone for four or five weeks, and the continuing of the breast feeding plus two bottles a day for several months. When each mother is taught to weigh her baby once a week, to record the weight, to report to her physician before beginning to feed the baby, instead of consulting her

friends or the advertisement on the patent infant food jar, infants will have breast milk conserved for them and physicians will face far fewer of the difficult feeding problems following injudicious weaning.

FAT AS A DISTURBING FACTOR IN INFANT FEEDING.*

By LANGLEY PORTER, M. D., San Francisco.

The disturbances due to fat may be classed as disturbances in the breast-fed and disturbances in the bottle-fed. These disturbances may further be divided into those evidenced by indigestion, either gastric or intestinal, and those evidenced by disturbances of metabolism.

The gastric disturbances of the breast-fed give rise to various types of vomiting. The lesser degrees are commonly seen, and may vary from slight regurgitations of sour material to the rejection of a meal from a half to an hour after its ingestion. Such cases are so obviously due to fat that the remedy is usually quickly adopted. The watery vomiting that occurs an hour after meals and which is often attributed to sugar excess, is in many instances due to fat in too high percentage. Sugar in high percentages is much better tolerated with low than high fat mixtures.

An even graver type of vomiting, often propulsile in character, accompanied by visible gastric peristalsis with pain, distress, gastric spasm, the rejection sometimes of more than one meal, may occur as a result of too high fat percentages, or of fat that has undergone hydrolasis by bacterial contamination. It is such a condition that gives rise to pyloric spasm in infants, a disease which simulates hypertrophic stenosis, and I believe the majority of the cases diagnosed pyloric stenosis which have recovered under medical treatment, have been instances of this condition. Czerny has reported such a case in which the stomach contents contained no hydrochloric acid, but were loaded with free fatty acids. Some time ago I saw a case in consultation with Dr. Harry Reynolds in which the question of pyloric stenosis arose. Here the symptoms were such as have just been detailed. The child recovered completely in about six weeks under a regimen of fat free food given through the stomach tube after a daily lavage with Seiler's solution.

Another common result of too high fat in the food is loss of appetite. The child becomes easily satiated, loses weight, and this fact accounts for a considerable number of cases of wasting in early infancy, and may even in the earlier months give rise to the beginning of the condition known as marasmus or infantile atrophy.

In intestinal disturbances, curiously enough, one may meet with opposite conditions, either diarrhea or extreme constipation may follow the overfeeding of fat. The characteristic stool of fat diarrhea is graphically described by Holt's term, the scrambled egg stool. In this soft, greenish-yellow, semi-solid fecal matter is mixed with mucous and with white flakes and larger masses up to the size of a dime. These masses are for the most part proteid coated with fat; a few of them, however, are lumps of soap or fatty acid; from three to ten such stools may be voided daily. The constipation caused by fat excess is less frequent in breast than in bottle-fed infants, but is characteristic; a dry, gray, crumbly evacuation voided with difficulty by a child who is restless, especially at night, who is constantly distressed, who cries or grunts a great deal, and who if old enough, prefers to sleep face downward on thorax and knees, thus protecting its tender belly. As a rule, such a child gets too much fat, not because the breast milk is of high percentage, but because of too frequent nursings, especially is this apt to happen at night in the case of those children who sleep in the same bed with the mother. A third type of intestinal disturbance that follows overfeeding of fat is that accompanied by extreme constipation with putty-like stools or with evacuation of hard, white scybalous masses very graphically and correctly described by mothers as being just like marbles.

If the child's digestion endures the fat excess, sooner or later metabolism fails and poisoning of the infant follows. Carl Leiner of Vienna has described a form of erythema of breast fed infants fatal in a large proportion of cases, which he calls erythema desquamativa, and which undoubtedly is due to fat alteration in the mother's milk. With Dr. Chipman I have seen one such case which died in the Lane Hospital and one other was referred to me by Dr. Walter Coffey. Both were characteristic and presented the following clinical essentials: Breast fed babies with widespread dermatitis, a red skin covered with grayish-white shining scales which were not adherent, and were more marked on the dorsal than ventral surfaces. The scalp and eyebrows were covered with thick yellow crusts easily removable from the inflamed but unbroken integument. The face was more affected than the trunk; the hands and feet were affected only in patches. (In one of my cases the eruption first appeared on the soles and palms.) These cases are not very uncommon, and are usually mistaken for seborrhea, but the children are more severely ill and appear cyanosed. Unlike seborrhea the skin underlying the scales is dry and fissured, especially around the mouth. There is fever and diarrhea. That the milk is at fault is demonstrated by the fact that these children, if removed soon enough from the breast, when fed get well, and they get well most promptly on fat-free milk. Both cases referred to me came into the hands of my colleagues when the skin had practically lost all its function and both children died.

A common form of fat damage in nurslings due to metabolic disturbance is seen when a too frequently fed infant begins to be pasty appearing and pale, to sweat about the head, to roll and rub the head on its pillow, and becomes constipated as already described; on examination such a child will have a

* Read before the Cooper College Science Club, April, 1909.

somewhat enlarged tender spleen, a big liver, a protuberant belly and will show a blood picture in which lymphocytes are markedly increased, red cells and hemoglobin lessened and in which various degrees of deformity and neucleation of the red cells may be present. In fact, in the absence of hemorrhage, such a blood picture is most often occasioned by an over-supply of fat in the food with an undersupply of proteids. Such a picture as I have drawn here is found at times in the breast fed baby, but it is a very much more frequent condition in those babies artificially fed, especially toward the close of the first year.

The causes of over production of fat in the breast milk, are three. Overfeeding of the mother with proteids, lack of exercise on the part of the mother, and too frequent suckling by the infant. It is well known that over-stimulation of an empty breast produces a milk of high fat. Unquestionably too, the physiological character of a mother's tissues is one cause for high fat production. The cause of the fat change that leads up to Leiner's disease we do not know; for the commoner and less menacing damages, attention to the mother's diet, to her exercise and a rigid insistence of long intervals between feedings, will nearly always remedy the defect.

If so much damage may follow ingestion of human fat, how much more may we expect the foreign fat of cow milk to cause in the human infant?

The fortunes that Horlick and Nestle have made are based on the fact that their almost fat-free diets are tolerated by hundreds of babies whose stomachs rebel at the fatty acids and the unsaturated carbon compounds of bovine milk fat. Normally, human milk fat contains only about 1-7 of volatile fatty acids and hardly any butyric acid, while cow cream fat contains more than 1-5. It is these differences that make it impossible to successfully feed, to most infants, the high percentage of cream called for by our percentage formulas, and it is this practical difficulty that has carried many of us to the point where we rarely attempt to use more than 2½ or 3% fat in feeding babies with cow milk mixtures. If one examines the formulæ of those like Winters of New York, who use especially high percentages of fat, it will be found that they also use large proportions of lime water, or other alkali, the effect of which is to form insoluble soaps by combining with the fat. These soaps are excreted as such and the fat as effectually withdrawn from digestion and metabolism as if it had been actually withheld.

Bovine butter-fat is a peculiar and individual complex that contains amongst its compound glycerides, fatty acids of low molecular weight. A glyceride is an ethereal salt of glycerol, and contains the radicals of butyric, oleic and stearic acid. From a physical point of view the butter fat is a solution of a fat of a high melting point in one of a lower and the melting point of the fat depends to some considerable extent on the food of the animal, and upon the melting point to some degree hangs the digestibility of the fat.

Fat inhibits the digestion in the stomach to some degree. It remains longer in the stomach than do proteids or carbohydrates and the gastric juice secreted in the presence of fat is less in amount and not so vigorous in action as in the absence of fat. It has recently been shown that there is some fat-splitting power inherent in gastric juice. In the gut the lipase from the pancreas hydrolizes fat with the formation of glycerin and fatty acids. The oleic acid dissolves the solid fatty acids which are then taken up by the bile and in part converted into soaps. These soaps and fatty acids are again built up into fat during absorption by the epithelium of the intestines. How fat is taken from one part of the body to another is not clear, but it is carried in some soluble form not injurious to the blood. It has been shown by Munk, and by Lowenhart that soaps are fatal in the blood stream of animals in very small quantities, and the experiments of Rachford seem to suggest that free fatty acids may be the form in which the transfer is made and it is also probable that neutral fat is conveyed in some cases by the leukocytes. The utilization of fat by the tissues is also a physiological mystery incompletely worked out. A certain proportion of fat when there is more than the animal needs for processes of combustion may be deposited as such, but the vastly greater proportion of ingested fat is burnt up and excreted by the lung as CO_2. The intermediate steps of this process of combustion have never been clearly worked out but Pohl's experiments suggest that the series of ethane products, malonic, tartronic, mesoxalic, and glyceric acids, which are fully combustible in the body, are the ones normally formed. On the other hand, it is also possible from this work to conceive that an incombustible acid of the series; oxalic, for instance, may be produced by some fault in metabolism, and it is not improbable that this may be the cause of certain cases of acidosis with convulsions and a pseudomeningitis. I was called to see such a case in the family of a physician.

A child had been diagnosed as suffering from meningitis; it was 4½ months of age, had thriven well and was in good physical condition but somewhat pale; the head was retracted; there was strabismus, a tendency to nystagmus; there had been general clonic convulsions following a tonic convulsion and a very well marked Kernig sign. The child was being fed with a mixture that on examination proved to contain nearly 7% of fat which it had never vomited, but which had given rise to the characteristic crumbling gray fat stool already described. The child also showed the very marked ammoniacal urine that accompanies such overfeeding and promptly got well on regulation of diet.

Such in brief, then, are the commoner disturbances that may arise from feeding infants with a food too rich in fat. This is the most usual error that pediatrists fall into in their attempts to feed babies. The remedy lies in proper regulation of the mothers when nursing infants, and the more recent practice of Czerny, Keller, Schlossman, Knopfelmacher and the German school in general of making children's meals four hours apart by preference from the time of birth, will in most instances, correct these errors in the breast-fed. In the bottle-fed, the feeding of more concentrated mixtures, either of whole milk or weaker cream, or if needs be, and for certain children, skimmed milk will in most in-

stances regulate the digestive process and prevent the development of damage to the child's tissues and the supervention of acidosis, wasting or anemia.

A very interesting clinical fact which many mothers have discovered for themselves is that a child overfed with cow's milk fat may have its symptoms ameliorated by the feeding of still more fat, provided that fat be rich in olein, which we have already said readily dissolves fatty acids and soaps. Olive oil which mothers use so extensively to relieve the constipation of bottle fed babies, fulfills this chemical condition, and is therefore effectual. Cod liver oil, which contains an even greater proportion of olein, is of still more use, and this explains its value in restoring the anemic, constipated and somewhat rickety over fed child to full health. In the London clinics, where the patients are extremely poor, many babies are fed on condensed, skimmed milk, to which the doctor orders cod liver oil added, and these babies do exceedingly well. Malted milk, as a substitute for milk mixtures may be used with great success for a few days or a week in the treatment of patients whose digestion or metabolism has undergone any of the damages we have already referred to in this paper.

In conclusion, it is a very clearly illustrated fact and a fact capable of daily demonstration in this city, that a large proportion of the distress, discomfort and disease among nurslings, both breast and bottle-fed can be traced to fat in the food, either in excess or perverted.

A very wide diversity occurs in the clinical manifestations that follow the continued use of excessive or improper fat ranging all the way from trifling vomiting or mild intestinal disturbance to grave even fatal anemia, and nervous disturbance serious enough to cause collapse and convulsions and to so disastrous a condition of the skin as erythema desquamativa, and one feels that it is the duty of every one who deals extensively with the diseases of children to insist on the possible disasters that may follow the too common practice of overfeeding with fat, and to urge a more rational and reasonable method of substitute feeding and of dealing with nursing mothers.

Discussion:

Dr. Henry Gibbons, Jr. I would say that my experience with the care of infants has not been clinical so far as public clinics are concerned, but has been gained from private practice and hence I think it would be less full of variety and serious manifestations. With regard to the treating of atrophic children I may say that beside the question of food other things are quite as important and these are particularly fresh air, sunlight and warmth. I will add, however, that diluted food has often served me excellently. I have said a great many times that digestive disturbance has come from too concentrated foods, whether too concentrated from the presence of fat, or casein or sugar, even the sugar of milk. Very often a food that otherwise is not considered sufficiently nourishing has served a much better purpose than food of the standard proportions, and again and again I have found that patients or children who were peevish and fretful and without appetite indoors, and sleepless, when taken into the sunlight quickly became restful and even sleepy and took food with relish and with capacity to digest it. This is a very common observation, as often have we observed the benefit of warmth with premature children. I believe I can entirely coincide with Dr. Brown in her conclusions. I have not been able to secure much advantage from the common methods, so-called, of preventing sore nipples. I do not believe that there is much advantage in them, I believe that sore nipples come from forcible nursing or suction by a vigorous child of the nipple of a breast that does not contain much milk. Again and again I have seen blisters drawn on the tip of the nipple by forcible nursing and then have seen the integument of this blister fall, leaving an excoriated or raw surface, which if not treated properly, soon becomes an ulcer and may become infected. For a good many years I have used Dr. W—— nipple shield as a protector during the intervals of nursing. I am satisfied that whenever the milk is of suitable character, even though insufficient in quantity, it is proper that the nursing should be continued. I agree with Dr. Brown in this regard. The milk is sometimes manifestly poor or deficient in certain constituents and when very low in fat may be entirely unsuitable to the child and incapable of nourishing it properly. At the same time we know that some mothers have milk with only 1% of fat and the child does pretty well. Unless the mother's milk manifestly disagrees I would not have the child cease the nursing. I have no objection to mixed milks or mixed cow's milk providing it agrees. With regard to the statements made by Dr. Porter in respect to the influence of fat, it seems to me that he accords it a very large part in the production of the complaints of childhood,—rather more perhaps than is warranted, or at first sight is warranted. I have not seen cases in which I could trace various evils to a large preponderance of fat. I have, of course, used an increase of fat sometimes in cases of constipation with advantage as advised by authorities and I have seen the disturbances which arise from very fatty milk. I am much more inclined to dilute milk than to strengthen it. I find very often that the milk that will disagree with a child because it is a little too rich, although it is of normal proportions, will not disagree if water is added. We know that a little water given to a child prior to nursing is often corrective. The tendency is to think if diluted it is not sufficiently nourishing. I remember physicians in this city who gave very young infants full milk and claimed that this was the only proper way to feed infants. I have never experimented in that direction because it seemed to me unscientific. Necessarily, since Dr. Porter was treating of the evil influences of fat, he would have little to say of the influence of casein. The preponderance of casein in cow's milk and its coarser character make it in my estimation, much the more important element to deal with in the modification of cow's milk for infant use.

"ARTHRITIS DEFORMANS."*

By L. D. MEAD, M. D., San Francisco.

While this case is primarily one of gonorrhoeal arthritis the patient has developed an interesting secondary condition of arthritis deformans which is well shown in the hands. He is thirty-eight years of age, a boilermaker's helper by occupation. In January, 1908, he acquired an acute gonorrhoeal urithritis which was supposed to have been cured in two weeks. One week after its disappearance the patient began to have signs of an acute inflammation in the left ankle, later in the right ankle and finally in the small joint of the right hand. He was admitted to the City and County Hospital, Surgical Division, and for several weeks subjected to the

* Read before the Polyclinic Gathering, April, 1909.

Bier's hyperæmic treatment with some improvement. He was discharged, but found himself unable to work on account of the severity of the arthritic symptoms and in December, 1908, was readmitted to the hospital. Both hands were badly crippled as well as both knees, ankles and right sterno-clavicular articulation. The patient was placed in bed upon urinary antiseptics and ichthyol ointment applied locally to the joints. Despite these measures he grew gradually worse and became markedly anæmic. After six weeks of such treatment Dr. Schmoll called attention to a peculiar deformity of the hands, that is, the characteristic appearance of arthritis deformans, with marked atrophy of the interosseous spaces, ulnar deflection of the fingers and thickening of the periarticular tissues. Having obtained good results in such conditions by the internal administration of arsenic in increasing doses he put the patient on that treatment with the most gratifying results. He gained rapidly in flesh and strength, his color improved and he was soon able to be up and around with fairly good functional results in all the affected joints, the hands showing the greatest improvement.

Dr. Freytag has made X-Ray plates of the patient's hands which show plainly the pathological lesions of arthritis deformans. Here we find in the phalanges and metacarpal bones, examples of the atrophic form of this disorder with rarefaction of the osseous tissue and in two or three places the actual formation of holes in the shafts of the bones. We also see about the articular cartilages certain evidence of the hypertrophic form of the disease. My object in presenting this case is twofold: First, as an example of arthritis deformans of the infections type due to the action of the gonoccus and its toxines in contra-distinction to the more common and more chronic form of the disease; secondly, to demonstrate the valuable therapeutic action of large doses of arsenic in this condition.

Dr. James T. Watkins, discussing: We are to be congratulated upon being permitted to examine Dr. Mead's case because it presents characteristics of each of the three types on non-specific joint lesions. Similar cases have been reported by several observers. When we think of these three, the hypertrophic, the atrophic, and the infectious type, we recall certain characteristics of each. The hypertrophic type is characterized by bony outgrowths of the periphery of articular cartilage. It occurs oftenest in men past middle age. The process is insidious and begins in the phalanges of the fingers but does not cause trouble until some large joint is involved. The joints most likely to be involved are those subject to occupational traumatisms, for example, in miners and coalheavers the joints of the hips and of the lower spine are most often affected. Arbuthnot Lane called this condition occuring in the last lumbar vertebra a spondylolisthisis. But in certain specimens of spondylolithisis studied in the Harvard Museum a true division into parts of the vertebra had occurred in such a way that the superior articular processes had remained united with the body while the spinous process, the laminæ and the inferior articular processes had separated in one piece from the others. The condition described by Arbuthnot Lane seemed to me to be much more in the nature of a rerefying astitis. I asked Dr. Zobel to moke a proctoscopic examination upon several of these cases and in each instance he was able to report evidences of some stoppage of the eliminative function. This was usually indicated by a blocking of the bowel through fecal accumulation. The atrophic type occurs oftenest in young women, and seems to follow upon too frequent pregnancies, excessive household cares and occasionally upon emotional outbursts of grief or fear. It, too, begins insidiously. Its points of selection are the second and third phalangeal rows, later it involves the wrists, knees, ankles, elbows and shoulders in about the order given. Pain is not a prominent symptom until erosions of the articular cartilage bone set in, but joint stiffness is complained of. Pathognomonic are first—the X-Ray plates, which give the faint shadows of the atrophic bones early in the disease with later the too close approximation of the two ends of the bones forming a joint,—and the spindle shaped swellings of the periarticular tissues caused by a round cell infiltration of the synovia. There is an obliterating endarteritis and while the disease process is active an excessive excretion of calcium salts. The infectious type of the disease begins acutely and follows an infection which may be local oi remote. For example the primary focus may be in the middle ear, the tonsil, the teeth or the genito-urinary tract. The nature and severity of the attack will depend upon the character of the infective organism, but in general, and distinguishing this group from the first two, you will find an acute invasion, a rise of temperature, a rapid pulse, a leucocytosis and localized pain, tenderness, heat and swelling. Turning now to Dr. Mead's case we note that it began as a gonorrhoeal, that is an infectious, involvement, but that now our X-Ray shows distinct evidences of an atrophic process, while at the same time we note the presence of the bony outgrowths peculiar to the hypertrophic type. The clinical necessity for recognizing the three groups of non-tubercular joint disease is apparent when we take up the subject of their treatment. With the infectious type we proceed, whenever possible, against the primary focus, either surgically or by vaccines or specific remedies. The joint itself we protect and in addition thereto sweat it with the hot-air oven, or the rubber dam. Bier's passive congestion method is often of service. Occasionally it is necessary to open and wash out the joint. With regard to the therapy of the other two conditions I cannot speak with the same fidelity. For the past two and a half years I have been studying these conditions and dissimilar as are the clinical appearances the most successful therapy which has been instituted for the one condition has proved most efficacious in the treatment of the other. This would lead one to think that they might be different manifestations of an identical cause. Allow me just a moment more to illustrate this treatment. In every case of hypertrophic arthritis seen thus far where it was possible to obtain a proctoscopic examination the bowel was found to be

loaded with feces. Only after repeated flushings with saline solution and occasionally with warm oil was it possible to remove these accumulations which proved peculiarly offensive. Examination has proved this matter to contain excessive amounts of nidol and the aromatics, evidences of albuminous putrefaction being regularly present. Besides supplying the patient with appropriate protective apparatus the effort was made in these cases to obtain an aseptic intestine by means of calomel and saline flushings and to maintain it by cutting out the albumins as much as possible and by prescribing large quantities of a lactic acid preparation of milk. Under this line of treatment the results have been as gratifying as they were before discouraging. Dr. John Gallwey was on one of these cases with me. Observing the immediate and progressive improvement obtained he employed the same treatment in the case of a young woman who was suffering from a severe and advanced atrophic arthritis. This patient was unable to move almost any of the joints without suffering exquisite pain, extensive luxations and sublaxations were already present. At once she began to improve and when I saw her three weeks later she was able to walk up and down the block. I shall ask your indulgence at no late date while I take up at greater length this vitally important subject of autointoxication.

Doctor Chas. G. Levison, discussing: It might be of interest to mention the treatment of infected joints and gnorrhoeal arthritis advocated by Murphy. Murphy's results are equal to those obtained by the vaccines. His method is as follows: an infected joint which is always associated with temperature, is aspirated and a mixture of 2% formalin and glycerin is injected into the articulation. In one case that I saw treated the temperature dropped from 104 to 99 within 24 hours, and the condition went on to complete recovery. I saw several of these joints treated by Murphy in the same way and the result impressed me as being very remarkable. Formalin has been used before but Murphy maintains that his mixture must be made at least 24 hours before it is employed, otherwise the particles of formalin are not thoroughly mixed with the glycerin and these produce a tissue necrosis.

Paper, "Brief Convalescence After Operation for Chronic Appendicitis," Doctor Chas. G. Levison: The patient that I was to have presented this evening did not find it possible to get here. I wished to demonstrate him for two reasons, the first being on account of the time in which he was permitted to get out of bed following an operation for appendicitis. It was a case of recurrent appendicitis and the operation was performed in the usual way with the gridiron incision; the peritoneum and muscles were united with continuous chromic catgut sature and the skin was brought together by a fine subcuticular sature of plain catgut. The first forty-eight hours following the operation were without incident and after this he was allowed to get out of bed, since which time he has been up and around. There is nothing remarkable about getting the patient out of bed after forty-eight hours because this procedure has been advocated for a number of years by men, including Ries and Boldt, who have permitted their patients to get out of bed after the first twenty-four hours. These gentlemen believe that these patients get along better and that altogether it is the correct procedure to be carried out; this belief is rapidly gaining ground. The second reason for presenting the patient is in my opinion of greater importance; the patient was suffering from backache for a long time and he has experienced most of his pain in his right loin. As the pain was confined to his kidney region the question of stone in the ureter and kidney had to be carefully considered. It was with difficulty that I was able to exclude stone, but the urine was examined and found to be normal. There was also considerable tenderness in the right lower quadrant and rectal examination revealed tenderness high up in the pelvis. The diagnosis of appendicitis was finally established. The patient was suffering from digestive disturbance, which was present more or less continually. Pain referred to the kidney region has been most unusual in my experience in appendicitis. At the operation when the appendix was removed, the meso appendix was contracted and distorted and the appendix was sclerosed with an obliteration of its lumen, all of which was quite enough to cause the man's symptoms, which have been quite relieved since the operation. Strange to say, three days after I had operated upon this patient, another man was referred to me and the character of his pain and its position was about what has just been described, but the second patient had considerably more pain than the first and there was marked hyperesthesia, which extended across the loin toward the left side. Deep pressure caused the man marked pain, but the entire behavior of the man was strongly suggestive of the hyperesthesia of hysteria. The man had marked rigidly in his right side in the appendix region and there was dulness over this area. This patient also suffered from marked digestive disturbance. Diagnosis of chronic appendicitis was made and at the operation a large appendix, bulbous at its tip which was buried in adhesions containing a considerable quantity of encysted fluid, was found. Considerable difficulty was experienced delivering the appendix on account of the adhesions. Both of these patients have been relieved of their symptoms, including the backache. I operated this morning on another case which is interesting as far as the diagnosis is concerned. The patient was a woman upon whom I had operated ten years before for a cystic tumor of the ovary. She made a perfect recovery and I have not seen her during all this time until three or four weeks ago, when she presented herself suffering from abdominal pain. She gave a history of severe abdominal pain which did not have any relation to her meals or food and there was no history of jaundice or digestive disturbance; hyperacidity was not present. There was no occult blood in the stools, jaundice had never been present. Her pain, which was of a gnawing character, was most marked at

night and was growing worse. The examination revealed marked tenderness at the situation of the gallbladder, which was the only tender point present. When pressure was made over the region of the gallbladder at the end of a deep inspiration it made the patient shriek with pain and brought the tears to her eyes. The diagnosis of gallstones was made, having duodenal ulcer in mind, however. When the abdomen was opened a normal gallbladder was revealed and upon further examination it was seen that the patient was suffering from a duodenal ulcer, which was situated on the posterior surface of the duodenum. The ulcer was bound down by adhesions. There was no question but that the woman's pain was caused by duodenal ulcer. I performed a posterior gastro-enterostomy and buried the ulcer with a purse string sature and practically obliterated the pylorus. I mention this case because of the difficulties associated with the diagnosis of duodenal ulcer. There are many cases of duodenal ulcer that are overlooked because they are not accompanied by classic signs and we have much to learn as far as they are concerned. I can recall the case of a New York banker who recently died. He had consulted every medical man of importance in the East and Europe. He expired suddenly and at the autopsy it was found he had died from a hemorrhage proceeding from a duodenal ulcer.

Doctor H. A. L. Ryfkogel, discussing: I was interested in the remarks of Doctor Levison with regard to getting his patients up early after an operation. I have been for the last three years in the habit of forcing my laparotomy patients to get out of bed no later than the third day. I felt that getting them up the first day was perhaps too much, but by getting them out on the third day they have made more rapid convalescence than otherwise. Of course, I have been very particular about saturing of the wounds and also with regard to the type of dressing put upon the abdomen, particularly if the wounds are very long ones. If one puts a well patient to bed for a couple of weeks, at the end of that time the circulatory system is not in as good condition as when the patient was put to bed and certainly the same thing occurs in patients in whom we have made any kind of an operation. It is also true that the statistics have shown that thrombosis has been definitely less common in patients who have gotten up early after operations than those who have stayed in bed the classical three weeks. Another thing to be noticed in getting these patients up early is that you have very much less trouble with gaseous distension and constipation than with those patients who stay in bed longer. I have an appendix case now upon whom I operated yesterday morning who sat up in a chair this afternoon and will to-morrow walk. I instruct the nurse that the patients can do just as they wish with regard to getting up immediately. If they want to sit up, no matter what the position, I permit them to take that position and I find that the patients are much better for it.

PASSIVE MOTION.*

By S. J. HUNKIN, M. D., San Francisco.

During the last few months two patients have appeared at our office a few months subsequent to fractures around the elbow, with the elbow joint swollen, thickened, tender and practically ankylosed. The bones in each instance were in fairly good position and in my opinion the more or less ruined condition of these joints was due to the so-called "passive motion." Each year we see at least a dozen joints, especially elbows and knees, damaged to a marked degree by this crude and dangerous practice. While it may be within the skill of a Bardenhawer to play and meddle with fractures in and around joints before the healing process is about completed, and while perhaps such measures may be advantageous in such hands, yet in my opinion in the practice of the ordinary man, the procedure is dangerous and is generally productive of nothing but harm. That accidents even are not rare is evidenced by the fact that within the past two years, I have seen a severe hemorrhage into the knee, two instances of refracture at the elbow, one supracondyloid and the other at the base of the olecranon, one refracture at the wrist, and one streptococcus infection after repeated anesthetization for passive motion, with resultant destruction of the joint and grave risk of amputation; these accidents being in direct consequence of meddlesome interference with the fracture during the process of repair. Times without number during this period have we seen patients in the extreme of terror, horrified, trembling (and not all of them children) in abject fear of the doctor handling the extremity, so terrible has been their experience, and so much has the joint been hurt, damaged and abused, in misguided attempts to forcibly increase the range of motion. Ofttimes they tell of repeated anesthetizations, so that this so-called passive motion may be carried out. Again and again have I been a witness to this procedure. The patient sits or crouches before the operator, who grasps the tender, injured, rebelling limb forcibly and again flexes and extends it. The suffering structures are torn and wrenched and torn again, until outraged nature cries, and shriek after shriek peals from the patient, who grovels on the floor in entreaty and protest. Such practice measures the crazed fear, the frenzied anchylophobia of the worried doctor, and this is a protest against the need of any such treatment.

The pain provoked stands in evidence against its value. We do not believe that pain is a requisite part of the treatment of any fracture after the reposition of the separated ends. Sometimes, alas, it is a concomitant of our lack of deftness of hand, of our slowness of wit, which prevents the securing of immobilization, so promptly, so easily and so certainly as desired, but always its production is deplored and certainly never to be provoked. Let me recur to some words of John Hilton. Speaking of the early man he says: "Pain was the prime agent. Under

* Read at the Thirty-Ninth Annual Meeting of the State Society, San Jose, April, 1909.

injury pain suggested the necessity of and indeed compelled him to seek for rest. Every deviation from this necessary state of rest brought with it, through pain, the admonition that he was straying from the condition essential to his restoration. He must have observed with astonishment the breaking asunder of the newly formed tissue, or the steady development into normal structure, which occurred in exact accordance with the disturbance or rest to the parts which the sense of pain had enabled him to regulate so accurately. . . . Growth and repair bear an exact relation to due physiological rest, local and general."

Gentlemen, I need not call your attention to the difficulty in getting satisfactory repair in tissues where rest cannot readily be secured. Take an anal fissure, for instance, where the healing structures are ever and anon violently separated from the needed rest, how the tortured nerves cry for rest and immobility. You can also readily see what happens in the joint undergoing repair, when the tissues are put upon tension and bruised and torn and bleed again. It needs also but a cursory study to see Nature's attempt to give rest, the organization of the effused blood, the production of more and more callus, the building up, around, and within of more material, the pouring out of more lymph and the development of more and more natural splinting, perhaps a resultant ankylosis and the production of what was the chief object of the surgeon to prevent. It may be accepted as axiomatic that the closer the approximation of the fractured bones, and the more secure this position is maintained, and the less meddling attempted, the less callus is produced and it follows as the sunshine follows the rain, the better the repair and the quicker and surer the return of function. On the other hand, the greater the displacement and the more joggle permitted, the more callus and generally the lesser function. I take it, it is a truism in surgery, the more perfect the physiological rest secured during the entire process of repair, the more perfect the healing and the more likely the easy, rapid and natural resumption of function.

What is "active motion" and what is meant by "passive motion?" Active motion, we understand, is that movement made in a joint by the contraction of the muscles around the joint, or more correctly, if more narrow, perhaps, the movement produced in a joint by muscular action in even balance, of the subject. On the other hand passive motion designates the movement produced by outside forces (usually the hand of the operator) in the joint of the subject, while his muscular system is in complete relaxation. This absolute or even approximate relaxation presumes freedom from pain and this in its turn presupposes practically no mechanical barrier to movement. It is hardly conceivable that such relaxation can be obtained in a conscious patient, during any amount of movement, if adhesions exist, or any mechanical barrier is present in a joint. If such are not present, then no reason exists for the practice. Under complete anesthesia then only can passive movement be made against mechanical impediment and then it seems to me, it must only add new traumatism to the old, provoke new production of callus and in the large majority of cases, new adhesions must form and only harm result, unless anesthesia is maintained and movements kept up, during the whole process of repair, if repair would go on under such circumstances. If mechanical conditions are such in a recovering joint that forcible corrections under anesthesia appear advisable, surely it is better surgery to open the joint and either alter the condition or remove the barrier.

Discussion.

Dr. T. W. Huntington, San Francisco: This is a very opportune time in which to say a word in connection with a subject which has often been in my mind. The Society is to be congratulated upon having listened to so rational an expression relative to a subject to which too little attention has been paid in the past. There is one side of surgery which has appealed to me perhaps more than any other. This is not altogether scentific, but it makes for what I regard as humane. The impropriety of the unnecessary production of pain cannot be too clearly set forth. As a rule, it is not necessary to do such violence in the handling of joint injuries as to produce great pain. Finesse, gentle handling, and extreme delicacy of touch are essential qualities of the surgeon. I have learned to deplore the scream of the child or the groan of the adult, and I hope never to be disabused of this idea.

Dr. S. Stillman, San Francisco: While I think we all agree with the proposition that the old method of forcible breaking up adhesions, and passive motion in the sense of "brisement forcee" is wrong and has been abandoned by the profession, there is still, however, need of passive motion in the proper sense. Colles' and other fractures at or near joints and in people who will not move their fingers or wrists or other joints, are cases requiring judicious passive motion. Abel Mix Phelps of New York laid down the law ten years ago that passive motion should never be given under anesthetic because one could not tell the damage one was doing the joint, that consciousness to pain must be present and that pain must be produced in moderation, but should not go to the extent of actual suffering, that passive motion was necessary but should never be undertaken under anesthetic or never to the point of occasioning real suffering. That has been my guidance. I do not think I have ever hurt anybody or injured anyone, but I have had, even with such modified and such careful passive motion, a good deal of difficulty in getting old women with Colles' fractures to use any effort of their own to improve the function of their joints and I believe both passive motion and massage are of great importance in the treatment of these cases, as much as in fractures involving other joints.

Dr. L. J. Belknap, San Jose: I have had a good deal to do with joints, especially ankylosed joints, and also joints after operations and have obtained the best results from a treatment similar to the Bier treatment, but using the hot and cold air treatment. After fractures we massage the thigh above and take the large toe as an index, watching the color change. We also use the deep breathing exercises to improve the circulation. We recently had a case sent in from the lumber camps, where a large log had rolled on the patient breaking the tibia and fracturing the fibula. When he came to us it was terribly swollen and after packing with ice, examination with the X-ray showed the fracture. After putting the leg in place, we treated with massage with excellent result. With the hot and cold air treatment the tem-

perature carried to about 250 degrees and we used the cold to stimulate the deeper tissues. In these fracture cases we also use heat and cold to the spine, beginning with friction.

THE INTERRELATIONS OF GLANDS WITH INTERNAL SECRETION.

Since Brown-Sequard guided by the fatal results of the extirpation of the suprarenal glands first established the idea of internal secretion, the physiological and clinical significance of the function of the ductless glands has been the subject of great controversy. On the one side it was looked upon as a fantastic creation of the imaginative mind of the great French physiologist, on the other hand general conclusions without experimental or clinical foundation were drawn. The whole theory of internal secretion was placed upon solid ground by clinical experience; the occurrence of myxedema after the complete extirpation of the thyroid. The chain of evidence was closed when the cure of myxedema was obtained by the feeding of thyroid extract or gland.

This was soon followed by the work of Mering and Minkowsky demonstrating the diabetes following the extirpation of the pancreas. The theory of Mobius relating the symptomcomplex of exophthalmic goitre to the hyper-secretion of the thyroid gland found enthusiastic reception after the thorough establishment of the theory of internal secretion. The recent researches showing the relations of tetany to the parathyroid glands, of acromegaly to changes in the hypophysis, completed the list of new facts gained in the domain of internal secretion.

Clinical and experimental data pointed to the fact that the product of these internal secretions regulated certain very definite functions of the animal economy easily demonstrable by experimentation.

The first fact establishing the relation of two glands to each other is due to the experimental genius of Bayliss and Starling.[1] Pawlow had established the fact that the contact of the acid stomach contents with the mucosa of the duodenum produced a secretion of the pancreas. The mechanism of this action became clear when Bayliss and Starling demonstrated that an acid extract of the mucosa injected into the blood started the secretion of the pancreas. They established at the same time the fact that the subsance formed in the mucosa withstands boiling and therefore does not belong to the category of ferments; its was classed as a hormon and named secretine.

A second hormon was found by the same two physiologists in the ovaries of pregnant animals. They obtained a substance, withstanding heating, which, when injected into non-pregnant animals, caused enlargement of the breasts and lactation.

Of the greatest interest are the recent discoveries of Leo Loeb.[2] He extracted from the corpus luteum of pregnant animals a substance, which when injected into a normal animal caused the formation of a decidua.

Very nearly related to the hormons is the product of the internal secretion of the chromaffine system; adrenalin. A number of cells are found throughout the body, principally in the medullary portion of the suprarenal glands, partly scattered throughout the sympathetic nervous system, characterized by their affinity for the chromic salts. The chromaffin substance these cells contain is adrenalin. Like the hormons, it withstands heating; its constitution is so simple that its chemical synthesis has already been achieved.

Adrenalin besides regulating the tonus of the peripheral vessels has a very important function in the metabolism. Blum [3] first discovered that the injection of adrenalin produced constantly a glycosuria. Under the influence of muscular work the cells of the cromaffin system lost their affinity for chronic salts showing that their adrenalin has been used up. As at the same time the glycogen disappears, Schur and Wiesel [4] suggest that this process of melting down of glycogen is due to the action of adrenalin and that in general the mobilization of the carbohydrates in the animal body is regulated by adrenalin. It is highly probable that the glycosuria after the intravenous injection of adrenalin depends upon a too rapid and excessive mobilization of carbohydrates.

On the other hand the pancreas secretes a substance which oxydizes sugar into CO^2 and H_2O. The absence of the internal pancreatic secretion causes a hyperglycemia, as the tissues have lost the ability to oxydize sugar. Under normal conditions the mobilization of carbohydrates by adrenalin and the oxydation by the pancreatic secretion go hand in hand and the percentage of sugar in the tissues and in the blood is kept at a constant level. If this equilibrium is disturbed through increased mobilization by adrenalin or diminished destruction by the pancreas hyperglycemia results with excretion of glucose in the urine.

The carbohydrate metabolism is, however, not only regulated by these two internal secretions; an important part is played by the thyroid gland, which exerts an inhibitory action upon the pancreas. Hyperfunction and hypersecretion of the thyroid gland as observed in exophthalmic goitre results in a diminished activity of the pancreas. It has long been known that small amounts of glucose fed to patients with exophthalmic goitre produce alimentary glycosuria; the complication of Graves' disease with diabetes is by no means a clinical rarity. These clinical facts are easily explained by the inhibition of pancreatic activity by the hypersecreting thyroid.

On the other hand, enormous quantities of glucose are oxydized in myxedematous patients as the action of the pancreas is increased. Larger quantities of its internal secretion are in circulation, so that even a surplus of mobilized sugar can be taken care of. Experimentally the injection of adrenalin does not produce any glucosuria in thyroidectomised

dogs; the hypersecreting pancreas oxydizes all the available sugar.

If the pancreas of a thyroidectomised animal is extirpated the resulting diabetes differs from the ordinay pancreatic diabetes. The metabolism of the proteins is hardly increased above the normal, while in ordinary pancreatic diabetes the destruction of proteid is increased to about 4 times the normal amount. This demonstrates clearly that the thyroid is in a state of hyperactivity after the extirpation of the pancreas and has its usual favoring action upon the destruction of the tissue proteids.

The activity of the chromaffine system is also tremendously increased after the extirpation of the pancreas. The adrenalin mobilizes every molocule of the polymerised glucose, the glycogen, explaining the complete absence of glycogen in pancreatic diabetes.

The influence of the thyroidea and the chromaffine system extends also to the fats. We know that hyperfunction of the thyroidea leads to a rapid loss of fat; that myxedema is characterized by an accumulation of fat in the body. Feeding of thyroid extract leads to a rapid loss of fat, as we know from therapeutic experience. Injection of adrenalin produces a rapid loss of fat, which according to the experiments of Eppinger, Falta and Rudinger[5] is mobilized by adrenalin, oxydized by the thyroid secretion.

These results lead to the following conception:

Under ordinary conditions adrenalin mobilizes albumen, fat and carbohydrates which are oxydized under the influence of the thyroid secretion. If the thyroid is hyperactive the mobilization by adrenalin is increased; chromaffine system and thyroid have a mutually favoring action upon their functions; if the activity of the thyroid is diminished the mobilization by adrenalin sinks. As thyroid and pancreas have an antagonistic action a diminished pancreatic secretion will lead to hyperthyroidism and a corresponding increase in activity of the chromaffine system; active pancreatic secretion leads to an inhibition in the thyroid gland and secondarily in the chromaffine system.

The relation of the parathyroids to the thyroid in regard to metabolism is not fully elucidated. Only one fact, which points to a marked antagonism in their action, has been established experimentally; while in thyroidectomised animals the injection of adrenalin does not produce any glycosuria, excretion of sugar follows the exhibition of adrenalin in animals whose parathyroids have been extirpated together with the thyroid.

The relation of the sympathetic nervous system to the glands of internal secretion is of great interest. Adrenalin has a specific irritant action upon the endings of the sympathetic nervous system. The vasomotor nerves contract if adrenalin enters the circulation; adrenalin instilled into the extirpated eye, in which the action of the sympathetic nerve is not overcompensated by the oculomotor, produces a dilatation of the pupil. The internal secretion of the pancreas has an inhibitory action upon the sympathetic nervous system. Lack of pancreatic secretion results in a hyperexcitability of the sympathetic nervous system. Stimuli which with an intact pancreas were unable to overcome the restraining action become active; the pupil dilates after instillation of adrenalin in the intact eye.[6] This reaction has pointed in one of my cases to an atrophy of the pancreas, verified at autopsy.

On the other hand thyroid extract increases the irritability of the sympathetic nervous system. Injection of thyroid extract very frequently leads to mydriasis after the instillation of adrenalin into the pupil of the intact eye. This reaction indicative of hyperactivity of the thyroid occurs in a number of cases of exophthalmic goitre.

The relation of the adrenal to the genital glands is of great interest. Histologically the adrenal consists of two parts: the medulla containing the chromaffine substance and the cells originating from the sympathetic, while the cortex consists of cells rich in glycogen and originating from the mesodermic epithelium which covers the fore part of the Wolffian body in front of the germinal epithelium. Pathological observations show that in a number of cases lesions in the cortical part of the adrenals are related to changes in the sexual characters, a fact extensively discussed by Bulloch and Sequeira.[7] They report a typical case in which a girl began to menstruate at the age of 10 years, after which there was a rapid development of the generative organs and female characteristics with marked obesity and excessive growth of hair as well as on the pubis and axilla. These changes accompanied the appearance of a tumor which at autopsy was found to be a tumor of the left adrenal with the structure characteristic of the adrenal cortex. In the literature they found eleven cases, involving chiefly young girls and all characterized by the association of tumor of the adrenal cortex with premature sexual development and not infrequently pseudo hermaphroditism. In addition to these are cases in which precocious development chiefly in females has been found accompanied by simple hypertrophy of the adrenals.

In a case recently reported by Thumim[8] the formation of an adrenal struma in an adult caused excessive growth of hair and change in sexual characteristics.

The development of the genital organs and of the secondary sexual characters seems also to be influenced by the function of the hypophysis. In slowly developing tumors at the hypophysis there develops a set of symptoms first described by Frankl-Hochwart[9] and Frolich occurring in young people, who had not attained their full growth. As the tumor increases the same ocular symptoms develop as in acromegaly. Obesity, a pasty swelling of the face, stop in genital development, disappearance of pubic and axillary hair and impotence are very marked. It is exceedingly interesting that after the removal of the tumor some of the symptoms disappeared: the axillary hair began to grow again and erections recurred.

The relation of the thyroid with the genital or-

gans has been known for a long time and clinical experience has shown that increased activity of the genital glands leads to swelling of the thyroid and symptoms of thyroidism. The activity of the genital glands calls in some way for an increased amount of thyroid secretion. These are the cases of parenchymatous swelling occurring in pregnancy and during menstruation yielding to thyroid feeding. On the other hand, absence of thyroid in myxedema suppresses the genital functions.

The interrelation of two glands can be conceived in two ways: either by circulation or by nerve influence. Reaching the glandular cells directly by circulation the internal secretion can either stimulate or inhibit their action, or it may reach the nervous centres and inhibit or create stimuli. Very little so far is known in which way these interrelations are effected; a number of facts, however, point to the nervous system as the agent of communication and action. Falta, who has devoted a great number of experiments to the elucidation of these points, expresses himself as follows:

A portion of the nervous system, as is known, governs principally the vegetative functions; another, the functions of the heart, of the intestines, and the metabolism. Since glands of internal secretion control the internal metabolism, it is to be expected, *a priori,* they will control also these portions of the nervous system. This is, indeed, a fact. Among the symptoms of hyperthyroidism the majority point to a hyperirritability of the sympathetic nerves. So, also, adrenalin exerts its chief influence upon the nerve endings of the sympathetic system. So, too, puncture of the medulla causes glycosuria probably by stimulating the cells of the chromaffine system to an increased secretion of adrenalin. The mechanism, then, I conceive to be, that a period of excitation is established in the nerve centres of the fourth ventrical, from which impulses are sent by way of the splanchnic nerves to the chromaffine system. On the other hand, we observe that the internal secretion of the pancreas is associated with the tonus of the autonomous vagus. Important facts indicate that certain drugs which have a stimulating effect upon the vagus increase the internal secretion of the pancreas. One sees, therefore, that the interaction of the glands of internal secretion is paralleled by the relation to the sympathetic nervous system; finally, that there are relations with the muscular apparatus is evidenced by the excessive hyperirritability of the motor neuron, which results from failure of the parathyroids. E. S.

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2. Leo. Loeb: The production of deciduoma. Journal of the American Medical Association, 1908.
3. Blum F. Uber: Nebennieren Diabetes. Deutsch Archiv fur Klinische Medicin, Vol. 91.
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7. Bulloch & Sequeira: Transactions Pathological Society, London, 1905.
8. Thumim: Berlinger Klinische, Wochenschrift, 1909, page 103.
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THE MALARIA ZONE.*

D. F. RAY, M. D., Stockton.

It is by a comparison of past and present that we arrive at a true measure of our progress in all things, all sciences, all arts and all professions. Such a comparison, expanding as it does the imagination, giving a freshness and renewed splendor to our hopes, and diademing the labors of an active and well-spent life with the coveted trophy of success, calls into action some of the great and more refined forces within us; becoming indeed a most wholesome exercise and one in which the medical man (be his branch what it may) experiences a supreme delight. Viewed either as a whole or branch by branch the evidence obtained attests a marvelous progress in all lines of the medical profession. The comparison renders most striking the advancement made in biologic science and preventive medicine as a review of the subject of this paper will reveal.

Recent historians [1] claim that the decline of Greek greatness was due to the introduction of malaria. The first mention of its occurrence is in the Wasps of Aristophanes 422 B. C., but the writings of the fourth century B. C. give evidence of its prevalence.

Empedocles,[2] a disciple of the illustrious Pythagoras, was evidently acquainted with it and advised the adoption of sanitary measures to save his own city from its ravages. His advice was taken and the city saved. Agrigentum was his home city and was periodically ravaged by fevers. He observed that the fevers became general in the same month of each year and that their appearance coincided with the return of the sirocco, which blows in Sicily on its western side. He advised to close by a wall, as by a dam, the narrow gorge from which this wind blew upon Agrigentum. His advice was followed and the city was made free from the fever. Selinus, Greece, was also accustomed to the perils of periodical fevers, undoubtedly malaria. Here again Empedocles gives evidence of possessing some knowledge of malaria and preventive medicine as well. The fever in Selinus, he thought, was caused by a sluggishly flowing stream of water which passed through the most densely populated portion of the city. He advised the conducting of two small rivulets into it, increasing thereby the velocity of the flow and saving the city from the scourge. The sanitation here advised, cannot be improved upon very much at this time—the "20th century." Whether the advice given here in sanitation is indicative of a training in sanitary science or of strong personal sagacity, is inferential. That Greece was first to suffer from malaria history abundantly confirms.

All nations have suffered in consequence of its prevalence at some time in their history.

Reviewing the different statistics and mortuary reports of the United States and several of the different states, together with reports from foreign countries, we find a very decided decline in the prevalence of malaria throughout the civilized

* Read before the San Joaquin Valley Medical Association, 1909.

world. Many places where it formerly prevailed are now free from it. In England malaria was at one time the nation's scourge; it is now seldom seen there. France, at one time a sufferer from malaria, is now free from it, and has been for the past twenty-five years. Italy, while still showing a high mortality rate from malaria, has reduced it two-thirds in the fever-ridden parts of her territory in the last five years. With such a rapid reduction in the mortality due to the malaria, with well-trained men actively engaged in preventive medicine, supported by an enlightened government, we shall very soon expect to find Italy, like England and France, free from the disease.

The inroads it has made in the population of the United States may be seen from the following statistical table:

	Year	Deaths from Malaria
In the United States	1890	18,594
In the United States	1900	14,874
In State of Mississippi	1890	1,273
In State of Mississippi	1900	983
In State of Texas	1890	2,102
In State of Texas	1900	1,331
In State of California	1890	153
In State of California	1900	119
In State of California	1907	70

(Mississippi is in state population about equal with California).

While these statistics show a marked decline in the mortality due to malaria, they also manifest a needless sacrifice or loss of life to a preventable disease. Many sections of our country have been slow in growth and general development by reason of the extreme prevalence of this disease. To what degree it has affected our greatness as a nation or as individuals, is a subject worthy of careful study. Should the child who is infected with malaria or its cachexia be considered a desirable subject for the school room, or the laborer for the field or the judge for the bench?

To what the disappearance of malaria in England, France and the United States is due is not easily explained. It is, doubtless, due to the drainage of land and improvement of sanitary conditions in general. The theories for the existence of malaria have been as numerous as color is varied, some classing it water born, others advocating its cause to be conditions of soil and air. Galen, the father of medicine, was acquained with fevers and distinguished between the Continued and Intermittent. Quotidian he thought, caused by phlegm, tertian by yellow bile, quartan by atrabile. The true cause of malaria was discovered by Laveran in 1880—the malarial parasite. The names of Ross and Golgi, Bignami and Grassi and Bastianelli, all prominent biologists, share about equal in the honors of the completion of the discovery of Laveran, each adding an important link in the chain.

That the Anopheles mosquito is the agent which carries the infection from one individual to another, is no longer questioned. It is the female that sucks human blood only and she is active at night. Two factors are, therefore, evidently essential for the spread of malaria—the parasite in the human blood and the mosquito. The mosquito which conveys malaria is bred in pools, puddles, ditches, canals and other bodies of stagnant or slowly moving water. Malaria is prevalent in the country or district surrounding such breeding places and the name "malaria zone" is very soon acquired. With an effective system of drainage the breeding place is destroyed, malaria disappears, but the title acquired, "malaria zone," lives on and on, indelibly staining the good name of that locality and affecting property values most disastrously. Many sections of the country have suffered great financial loss by the unmerited application of "malaria zone."

The San Joaquin Valley, California, at one time, doubtless, was quite generally infected with malaria and merited the application "malaria zone," but now, showing as it does a two per cent mortality rate from the disease, will medical men continue to apply the vesicating term "malaria zone"? Thirty years ago the disease prevailed in this, my home city (Stockton, Cal.), epidemically. It is now practically free from it as the following report of a mosquito survey, which was made two years ago, will demonstrate:

The preventive measures consist of drainage of all pools, puddles and stagnant waters (different kinds of oils poured upon the water is said to be effectively preventive), and mosquito-netting to protect the sick and prevent access to the houses of the well. For the application of preventive measures and prophylaxis in a broad sense, we rely upon our state and local boards of health. The demands of both the public and medical profession on departments of Public Health increase each year, and will continue to do so as long as there is growth in knowledge. Diagnostic laboratories where microscopical examinations are made of various character are becoming quite generally the rule. These examinations are made at the request of the attending physician in all suspicious cases. It is evident that the directions of these Boards of Health and departments should be under the control of specially trained sanitarians and microscopists. The public at one time was satisfied with the Health Officer who was successful in getting the position, his ability to fill it never being questioned.

In England the Degree of Doctor of Public Health is conferred. I note with pleasure that some of the medical schools in this country have added a like course, specially designed to meet the increased demands for trained men in the public health departments.

No one realizes more fully the need of these diagnostic laboratories than the busy practitioner, and no one will support more fervently the increased demands on the department of Public Health.

The advance in biologic science and preventive medicine in the last twenty years has been marvelous. The discovery of Laveran, Ross, Grassi and Bignami, placing malaria in the list of preventable

diseases, and the discovery of quinine as a specific for the disease, were two of the greatest in the world's history. To no branch of the great tree of medicine does humanity owe a more lasting debt of gratitude than to biologic science and preventive medicine.

It has made possible the building and enjoyment of prosperous homes in sections of the country previously shunned by all mankind.

With the rapid decline in the prevalence of this disease, as is indicated by statistics herein given, with a more rigid application of preventive measures supported by an enlightened and patriotic government, may we not reasonably expect to see this disease, which devastated ancient Greece, the home of philosophy, of high ideals, the spirit of beauty and the birthplace of Homer and Demosthenes, banished from the land?

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LOCAL ANESTHESIA.*

By V. G. CLARK, M. D., San Diego.

The use of local anesthesia, especially in America, has until recent years been relegated to an extremely limited field. In 1905 Braun of Leipsic published a book on the subject, and in the United States the work of Matas, Cushing and Crile, together with the clinical experience and articles of Bodine, Mitchell and others has done much to place this method of obtunding pain during surgical procedures on a more popular basis with the profession in general.

That the method still has its limitations, even its most enthusiastic advocate will not deny. Nor can it be denied that all other methods of inducing anesthesia are bounded by restrictions over which we may not step with safety. At the present time it is generally conceded, by those in a position to speak with authority, that the dangers and failures which attended the use of cocain and its derivatives in the past were due to a faulty technic and an ignonance of the proper strength and amount of solution necessary to suspend sensation in the tissues. It should be borne in mind that cocain produces toxic symptoms, only when an amount in excess of that necessary to produce anesthesia of the parts to which it is applied, is given. Cocain is a protoplasmic poison and forms an unstable combination with the tissues, which disintegrates slowly and after which it cannot be absorbed into the circulation, nor recovered from the tissues as cocain.

Bodine [1] says "That a solution of cocain, amounting in sum total to any fractional part of a grain intermittently injected during an hour of time is less dangerous than cerebral narcosis for the same period is obvious, and that it is entirely without danger to the patient is probable."

The Anesthesia Commission of the American Medical Association[2] in their preliminary report include the following recommendations:

First. That for the general practitioner and for all anesthetists not specially skilled, ether must be the anesthetic of choice; ether administered by the open or the drop method.

Second. That the use of chloroform, particularly for the operations of minor surgery, be discouraged, unless it be given by an expert. All points of the foregoing being considered, the local should be the method of choice in all minor operations and the borderline operations where the anatomy of the parts will permit of its use.

The commission reports in regard to local anesthesia: "Within recent years surgeons speaking with authority have urged us to employ local anesthesia in the case of many major operations, and last year J. F. Mitchell of Washington read before this section an important account of his experience with local anesthesia. Your commission have had the advantage of Dr. Mitchell's co-operation in preparing this report. With widening practice and endeavor, he finds the scope of local anesthesia to be surprisingly broad. The method is applicable not only to minor operations, but to all amputations of limbs, to operations on bones, to the exploration of the abdomen, for typhoid perforations, for appendectomy, for all forms of hernia, for all operations on the male genital organs and for most benign tumors."

Bodine[3] in a paper on "The Adequacy of Local Anesthesia in Inguinal Hernia Operations," after a series of over four hundred operations, says: "Every modification of the Bassini has been practised, varicoceles, lipomata and cysts have been met, transference of the rectus muscle, deviation of the sac neck and placing an undescended testicle have been practiced. The signal advantage of the method is the preservation of the structural integrity of the nerves in this area. Thinning and atrophy follow division of the nerves and must invite recurrence of the hernia. A hernia is as satisfactory as a circumcision under local anesthesia." And closes with: "It is the conclusion of this paper that local anesthesia is entirely adequate for the cure of inguinal hernia."

The surgeons of Europe have used local anesthesia much more extensively than those of this country. The late Prof. Miculicz employed the method for about one-third of the abdominal operations at his clinic; Kocher, Roux and others in the goitre zone give the local method the preference for thyroidectomy. In Kocher's second thousand cases of thyroidectomy reported in 1900 there were only four deaths. Mitchell's[4] comment on this is: "The greatest single factor contributing to this low mortality was undoubtedly the substitution of local for general anesthesia."

Among the contraindications we find fat ranking first in the estimation of the majority of those who make use of the method; it cannot be infiltrated and is painful during incision, also it limits the retraction necessary for the exposure of deep wounds. The fat subject can be operated successfully but not absolutely painlessly.

The personal equation of both the operator and the patient presents contraindications of varying degrees.

* Read at the Thirty-Ninth Annual Meeting of the State Society, San Jose, April, 1909.

Patience and gentleness on the part of the operator are essential to success and the surgeon who operates at a high tension should not expect an unqualified success with the method. The individual susceptibility of the patient to psychic influences may form a barrier to the use of local anesthesia. Time is an element which may deserve consideration in some cases; the method is necessarily slow. Very young children are not usually amenable to the method. Old age, disease of the heart, kidneys and vessels present no contraindication. Danger to life from the anesthetic is so small that it is practically not to be considered.

It has been argued by surgeons in the past that the tissues did not unite as readily after infiltration as otherwise. Whatever consideration this may have deserved in the earlier stages of the development of local anesthesia, it is deserving of none at all at the present time, for if a solution isotonic with the body fluids is used the old objection to the introduction of a foreign solution into the tissues is overcome, and the careful handling of the tissues which is necessary is conducive to an exceptionally speedy union, with a lessening of the chances of infection.

There are three methods of producing local anesthesia. First, by pressure; second, by the application of cold; third, by the application or injection of drugs.

Of the first two no more than a mere mention is necessary, their very narrow field of usefulness is well known, and if we attempt to apply them beyond this restricted area we produce more pain in the effort to anesthetize than would be caused by the operation itself, to say nothing of the disagreeable and dangerous after-effects.

A number of drugs have been proposed as having some advantages over cocain, and the probabilities are that each of these may possess some points of superiority in individual hands and in selected cases, but cocain and eucain B still hold the balance of favor with the majority of operators who use local anesthesia to any considerable extent.

The technic is exceedingly simple, except for the massive infiltrations of Matas, no special apparatus is necessary, the aseptic hypodermic syringe fulfilling all requirements. The two solutions proposed by Braun, the 1-100 cocain in normal salt solution with adrenalin, for the perineural (Halsted) and the endoneural (Crile, Matas and Cushing) nerve blocking, and the 1-1000 solution prepared in the same manner for infiltration, each of which may be still further diluted, are sufficient.

Morphin in one-eighth to one-sixth gr. doses, should be given one-half hour before the beginning of infiltration, and the dose may be repeated during or after the operation, either to quiet the patient or to control the toxic symptoms if such should appear. The more minute the knowledge of the distribution of the sensory nerves, the greater the facility and ease with which the procedure will be carried to a successful termination, seems almost axiomatic at present.

The "Indirect Local Anesthesia" of Bier, in which the veins are utilized to carry the anesthetizing agent between two tourniquets on a limb previously rendered bloodless, will undoubtedly prove valuable in surgery of the limbs. The anesthetizing solution is afterwards washed out by the use of a normal salt solution before the removal of the tourniquets.[5] [6]

Conclusions. It is the conclusion of this paper that local anesthesia is deserving of, and will receive, more attention in the future than has been accorded to it in the past.

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Discussion.

Dr. T. C. Edwards, Salinas: I have seen Dr. Bodine do this work and I know that it can be done thoroughly and with safety. I know that many surgeons avoid using the general anesthetic and I have seen expressions used, "local anesthesia was given because of the low hemoglobin count or because of heart complications, or because of kidney trouble, or because of shock which existed at the time." If we apologize for the local anesthesia on the ground that it can be given where general anesthesia could not be given we should use it more frequently than we do. I have done appendix operations, have resected ribs, opened empyemas with local anesthesias and other men can do the same thing, and this paper should have more recognition and discussion.

Dr. A. J. Belnap, San Jose: I have had considerable experience in the use of local anesthesia and have removed testicles, fingers, have done cervical and peroneal lacerations and also curettments under it and everything was repaired nicely. No pain was felt on the part of the patient. My experience has been very good. I use eucain rather than cocain.

Dr. H. A. L. Ryfkogel, San Francisco: I use, and have for three or four years, local anesthesia in all of my hernia operations. The doctor's paper omitted the discussion of perhaps the most important thing in the use of local anesthesia, and that is the psychic treatment of the patients before and during the operation. I recently had occasion to do a herniotomy on a physician of San Francisco and decided to use the local anesthesia and met with the first failure in my series of cases. The reason was evident. This man had a number of his friends present who assured him that it was cruel to do such an operation and that they knew he would be badly hurt, and he really was hurt and it became necessary to go on with the general anesthesia. This is the very thing we must not let happen. If he is at all nervous, one-quarter grain morphin will help. The patient must be assured that he will not suffer, and he should have some one talking to him during the operation. Either in herniotomies or goitre operations I have some one talking to the patient and encouraging him. In this way you will have no great difficulty. I think it unwise to do appendectomies under local anesthesias on account of the complications which might arise.

Dr. Carl R. Krone, Oakland: I am glad to hear the local anesthetic so well supported. There is an excuse for using the local anesthesia. You will find that the local anesthesia can be used in such cases where we do not interfere with the structural tissues which are very sensitive. You can go through the skin and work with the intestines if you are not rough. The beauty of the general anesthesia is in keeping the patient just enough under the anesthetic to prevent the sensitiveness of the tissues. Three or four days ago I gave a patient a general anesthesia with chloroform for a severe disease of the pelvis and during that operation that patient talked to me three or four times in the half hour. If you can give choloroform so that you can keep your patient floating on the surface of unconsciousness, you will not need the local anesthesia so much, and then you will not need to furnish friends to talk to your patient during the operation, and when you make a slip and sew up the urethra instead of your wound, it will not be so disagreeable for you.

Dr. Chas. G. Levison, San Francisco: There are two points that I desire to mention in reference to local anesthesia. The first is the time which should be allowed to elapse between the injection of the anesthetic and the time that the operation is commenced. Kocher has been quoted as being a great exponent of local anesthesia and as he operates upon his goitres by this method, he has had a large experience. Kocher's clinic is full of goitre cases and at the end of the semester when housecleaning is going on, I have seen as many as twelve goitre operations in one morning. The situation in the Kocher Clinic that the visitors lose sight of, is, that after the injection has been made, the assistants leave the room to indulge in their second breakfast or as the Germans call it, "zweites Fruehstuck" and after they have eaten this, return to the operation. This generally occupies from ten to fifteen minutes so that by the time they have returned, the patient is well under the influence of the local anesthetic. This factor is often lost sight of and will account for many of the failures that are experienced. Another point is the strength of the solutions used. Professor Reclus was the pioneer in the employment of the infiltrated anesthetics, he having used it long before Schleich. Reclus maintains that three grains of cocain can be used if the solution is not stronger than ½%, and he says that he has performed 10,000 operations without complication. The reason for his success he claims are that the patient should be kept in a recumbent position for at least one hour after the operation has been performed and that the solution should not be stronger than ½%. Reclus, however, at present employs stovain in a ½% solution.

Dr. Chas. G. Levison, San Francisco: I have been pleased with the fact that Dr. Krone has interested himself in the question of anasthesia as he has done. His method seems ingenious and is calculated to administer the smallest quantity of anesthetic necessary. It is only now that we are beginning to appreciate the fact that the anesthetic is one of the most important factors in surgery. For years all over the world, the anesthetic has been administered by almost anyone, and in France today, the anesthetic is being administered by students who have not yet graduated. In the United States the internes are generally the anesthetists. In some of the San Francisco hospitals professional anesthetists are now being employed. It is my belief that the condition which is generally called surgical shock, is most often caused by an excessive amount of anesthetic administered. Dr. Krone's method is calculated to be productive of excellent results. He mentions certain points concerning the mouth gag and the tongue forceps that are supposed to make it possible for the anesthetist to administer the drug to better advantage and to prevent the formation of mucus and other unfavorable conditions. It is my conviction that the mucus in the throat as well as snoring, imply that the patient under ordinary circumstances is being badly anesthetized, for I contend that if the stage of excitation is avoided, which means that the patient requires but a small amount of anesthetic, that an excessive formation of mucus and snoring do not occur. In my service tongue forceps are practically unknown.

Dr. H. A. L. Ryfkogel: Dr. Krone's paper certainly deserves discussion. I think that this method could be used in a way also that Dr. Krone did not mention and that is to protect the operator in the amount of anesthetic given, so that a definite amount of ether for a definite period of time could be estimated and the attention of the operator brought to it. I remember a case in which such a method would have been of much assistance. A cholecystectomy for gallstones was being done and we met with no difficulty in the operation, the time of the operation being about sixty minutes. After the operation the patient did very well for about forty-eight hours when he developed vomiting, a sweet odor of the breath and shortly died notwithstanding the injection of saline solution and alkaline enemata. In looking for a cause for the death, we found that more ether had been given to this patient in the forty minutes of operation than ever before to a patient in that operating room independent of time. If the anesthetist had been instructed to notify us when a certain amount per period had been exceeded, we would have been able to stop and the patient might have been saved.

OUR STATE BOARD EXAMINATION.

By H. D'ARCY POWER, M. D., San Francisco.

The subject of the medical license to practice has long been debated in the State, and recent events have lent more than usual warmth to the discussion. The charges concerning the August examination, the long and nearly successful attack in the legislature, and lastly the general tone and purpose of the report of the Committee on Education at the State Society, are all evidence that we are dealing with a vital and still unsettled question. I would scarcely have interjected myself into the discussion were it not that circumstances have given me an unusual opportunity to observe and form some opinions, and the gravity of the case seems to demand the expression of anything likely to be of service. Twenty-five years' close connection with medical education, both here and in Europe, has enabled me to view with some knowledge, the requirements and usages of examining boards, and at various times since the inauguration of the present system, in California, that knowledge has been requisitioned by various parties and interests, to examine and report on the work of the board. Let me say at the outset, that with one or two minor exceptions, I have never had reason to doubt the fairness of the examinations or the examiners; or to find fault with the general tenor of the questions asked. Nor do I think that the standard demanded has been too high, or the markings arbitrary. Acting on behalf of rejected candidates, of schools who imagined their students discriminated against, and in one instance on behalf of a higher authority, I have from time to time gone over papers in Medicine, Pathology, Physiology, Hygiene and Chemistry, and always, without knowing the marks

awarded, have given practically the same, and very often lower ratings. It will thus be understood that any criticism I offer is not in a hostile spirit, but in the fullest appreciation of the valuable work the examining boards have done, and the inestimable benefit that they have conferred on medical men and medical teaching in this State. But we have need to be more than correct in a general way; it is needful to eliminate every possible cause of complaint, and no question should appear on an examination paper that can be subjected to hostile criticism. It is to be remembered that the law and the obligations of medical ethics demand that, while we protect the public, we equally place no hardship or handicap on the applicant who is our prospective colleague, and if a practioner of another State our professional equal. As the law stands we must subject to the same examination the student fresh from college and the practitioner of twenty years' standing whose theoretical knowledge is likely to be the inverse of his practical experience. Now I maintain that while we can never do perfect justice to both classes in a single examination, we must nevertheless carefully avoid questions that are outside the reasonable reading or reasoning of either. Owing to the perhaps necessary, but yet unfortunate exclusion of college teachers from the board of examiners, the duties of the office devolve on gentlemen who, however excellent as practitioners, are rarely practically conversant with the existing standard of teaching, nor are they always equal to the difficult art of asking a searching yet clean-cut question. The result is seen in questions that are too often ambiguous, or unscientific in their phraseology. A few examples will suffice:

"What two important elements occur in the blood?" Carbon, Hydrogen, Oxygen, Nitrogen, Iron, Calcium, etc., are among the most important elements in nature, and the blood could not be blood without them. Did the examiner mean any two of these? If so, the question is childish, if not, who can guess what he did require?

"Differentiate Hypertrophic cirrhosis of the liver?" Did the propounder of that question forget that there are two distinct diseases characterized by hypertrophy and cirrhosis? How is the candidate to know which the examiner has forgotten?

"What are the typical anatomic findings, post mortem, in puerperal eclampsia?"

Did the examiner wish to imply that the gross anatomy is changed either ante or post mortem by the advent of eclampsia, or did he wish for a description of a possible, but not necessary morbid histology? Students are not supposed to read terms in anything but their normal meaning. Also we have had foolish questions. To ask the formula of quinin is to show an utter lack of true chemical knowledge, because the structure of quinin is such that its formula could not be deduced from any knowledge the student could be expected to possess. It has no significance and could only be remembered by a tour de force that would require the candidate to memorize the formula of every unrelated substance in the pharmacopœia, which is preposterous.

"What products of phenol are of interest in medicine?" What is meant by "products?" Substances directly manufactured from phenol? Things containing phenol? or derivatives of phenol? Ought a candidate with two hours to answer ten questions, spend time in searching his brain for all of these, or in wondering which was meant, or would it in any way affect his standing as a trained student, or a reliable practitioner if he could not remember any?

Occasionally we have questions asked that are unfair because outside the knowledge that a competent physician can be expected to store. For example, "Describe the gross appearance of the skin lesions in Coccidoides," or again, "Give the substitutes frequently used for barley, hops, and malts?" Finally, let me remark that it is derogatory to the dignity of the board, and in fact of the medical profession to set questions in bad grammar. "What are the origin and significance of urea." "Give the period of eruption of the *exanthema?*" (ta), or the use of *neuritis* for *neurites,* do not look well, and should not occur.

The above does not exhaust the list of questions that ought not to have been asked. It may be conceded that in the aggregate they are exceptional, and have probably done little injustice, but they have provided the enemies of medical education with their most effective weapons, they loom big in the imagination of the student, and are a disturbing element to the teacher. What students and teachers alike want is a *standard.* For my part it may be as high as any in the world, but it must be standard of known capacity and consistently maintained. Speaking as a teacher I would say that the great fault of medical education is its extent and superficiality. Let us have a standard demanding thorough, exhaustive knowledge within a circle limited to the useful. Let us test the knowledge of and application of principles, rather than the memory of unimportant facts. An examiner that is fit to examine can set the severest examination on quite familiar ground. Personally, I believe that no question should go outside the facts, or deductions on facts, contained in the latest text book on the subject in question. Men engaged in the hard grind of preparatory reading have no time for watching the vast mass of contemporary medical journalism.

Further, let examiners stay by their subject. How is the teacher of chemistry to prepare for the examiner, who under that caption asks for the "symptoms of the three stages of trichinosis?" The examination as it stands is not a test of fitness to practice. Firstly, because it does not ascertain ability by practical tests. The men are not required to do things, analyze urine, or stomach contents, examine blood or sputum as they are in Europe and in some places in the East. Secondly, there is no sufficient test of their ability to reason and draw correct conclusions. Ten short answers (the time limit is about ten to twelve minutes apiece) may test extent of knowledge but not the power to apply it. It makes for quiz compend instruction. This could and should be altered. Lastly, I would make a plea for the old practitioner—let at least some of the

questions in each subject be set with a view of bringing out the esxperience he ought to have acquired. If he fail where he ought to be strong, then reject him without mercy, but give him the chance the law intended, and professional courtesy demands.

Our present standard must be raised rather than lowered, but if we are to succeed in the salvation of an excellent law we must give no points to the enemy.

COOPER COLLEGE SCIENCE CLUB.

Discussion:

Doctor Wm. Fitch Cheney: It is only a few years since we were taught that ulcer of the duodenum was very unusual as compared with ulcer of the stomach. And it is only comparatively recently that the Mayos have determined that ulcer of the duodenum is as frequent as ulcer of the stomach and according to their statistics a little more so. But from the standpoint of the clinician it does not seem to me that it makes very much difference as to whether the ulcer it situated one or the other side of the pylorus. Many are situated across the pylorus and defy the powers of the physician to decide whether the ulcer is on one or the other side. After all if we consider the matter as belonging all to the same group of cases it does not make much difference. At the utmost, a space of three or four inches is involved; and for a man to make up his mind whether the ulcer is in the first, second or third inch of that space is impossible. After he has seen his cases operated upon a few times he mistrusts his conclusions. The diagnosis of the ulcer in the exact situation is a very difficult matter and does not make very much difference as to which side of the line the ulcer lies. The points which Doctor Levison has made are all very good. I have no fault to find with his methods of diagnosis and nothing to say regarding his methods of treatment. In chronic ulcer nothing can be expected from the medical treatment, and where there is a history of the condition going on for years, changes occurring in the vicinity of the ulcer, stenosis or perigastric, or peri duodenal adhesions, or attachment to the stomach or bowel, it is incredible that any medical treatment should be expected to cure and mechanical measures are the only cures. The question of differential diagnosis as between ulcer and conditions of the gallbladder has been brought up by Doctor Levison and this always causes a great deal of difficulty in diagnosis. The upper right quadrant of the abdomen is one of the most difficult regions for diagnosis. In gallbladder troubles or pancreatic conditions it takes time and work to reach conclusions by which we are able to make our diagnosis. Gallbladder cases differ in their history with regard to the occurrence of the attacks, and secretions of stomach and absence of blood from the bowels. We do not expect to find occult blood in the feces in gallbladder disease but peptic ulcer or in duodenal ulcer we do expect to find this; furthermore we find a comparatively clear interval of perfect health between attacks whereas, in the interval between the attacks of ulcer there is a great deal of dyspepsia; the character of the pain is usually different in the two. There is a very much greater intensity of the attack in the passage of gallstones, there is an absence of stomach symptoms whereas in ulcer there is the characteristic gastrology. After all this has been gone over I believe that again and again we find ourselves unable to decide. We may have a firm conclusion and yet we find ourselves deceived when the abdomen is opened. The only solution we have in the matter is that any one of these serious conditions call for surgery and the patient does not suffer by being submitted to operation. In the early cases of ulcer, whether in the stomach or duodenum, cure can be effected by medical means, but I think it very important to realize that after the case has gone on for years with recurring attacks it is absolute folly to expect permanent cure by medical means. We can improve these cases but sooner or later recurrence occurs and the confidence of the patient in the medical means suffers very materially. It is far wiser to urge the patient to submit to operation.

Doctor Emile Schmoll: As for our abdominal conditions we are indebted to the surgeon for the recognition of duodenal ulcer about which we knew very little before the time of abdominal operations. I think, however, that at present there is a tendency to exaggerate the frequency of duodenal ulcer which is often diagnosed and the ulceration is really situated at the minor curvature. Such cases are primarily gastric ulcerations and involve the duodenum afterwards. The differential diagnosis between duodenal ulceration and gastric ulcer is usually based on the following symptoms: bleeding by rectum and the occurrence of pain a long time after meals. I would like to say that exclusive bleeding by rectum is not characteristic of duodenal ulceration, as I have seen in gastric ulceration. I remember one case in which, as four or five large hemorrhages occurred through the intestines, the diagnosis was made of duodenal ulcer; there was, however, one point which attracted my attention and which made me doubtful; I finally decided to diagnose gastric ulcer in preference to duodenal based on the fact that the pain depended upon the position of the patient, occurring only when he laid on his left side. This is a most valuable sign in gastric ulceration. If gastric pain changes on changes of position I never hesitate to diagnose gastric ulcer; if it is dependent upon food and does not change on change of position I usually diagnose duodenal ulcer. In this case the patient could not lie on the right side, he was free from pain as soon as he turned over on the left side. My diagnosis of ulceration of the minor curvature near the pylorus was verified at operation. So far as treatment is concerned I do not think that we are justified in sending every case to operation; we know too little of the clinical history of duodenal ulceration, we have not known the condition long enough to observe the ultimate outcome. In cases of gastric and duodenal ulcer the treatment usually does not extend over a sufficient length of time; it is my conviction that treatment is not complete unless the patient has been kept in bed for at least six weeks on a soft diet. There are especially two complications of duodenal ulcer which are often put to the physician before the question of immediate operation: bleeding, one of the most dangerous complications,—and still I think it wiser to wait as a general rule until the hemorrhage has stopped before operation. First of all we are not sure to find the bleeding point which I have seen looked for in vain in a number of operations. I remember especially one case which a number of gentlemen present have seen where hemorrhages have persisted over a period of ten years and in which at operation no trace of the bleeding point could be seen. I think, however, that if an ulceration keeps on bleeding notwithstanding rational treatment, operation should be performed. The second complication is perforation, which of course, demands immediate operation. Perforation is a complication which, of course, demands immediate operation. I have seen in the last year two perforations of duodenal ulcer which were characteristic. In one the perforation had led to a pouch which was localized between the stomach and the liver. A case occurred recently at the City and County service of Lane Hospital. A man had come in with a history of long-standing dyspepsia which had grown worse in the last two or three years, but we got no his-

tory of sudden sharp pain or shock; he had simply grown worse in the last forty-eight hours. On examination we found rigidity of the muscles over the epigastrium, and Dr. Rixford and I were not quite sure whether it was a case of acute pancreatitis or whether there was perforation of a duodenal ulcer. On operation we found perforation of the duodenum with extra-sation of gastric contents all over the abdomen. This patient recovered.

Doctor J. Wilson Shiels: I find that a great number of men allow these cases to continue so long that the surgeons can do no good at all. If ulcer is diagnosed it would be wise to call in a surgical consultant, just as one should be in the habit of keeping in touch with a surgeon during a patient's third stage in typhoid. The physician should not wait until the stomach has lost its function before consulting the surgeon.

Doctor Chas. G. Levison: I am very glad to hear Doctor Cheney express himself as he has done concerning this subject, and I think it shows the result of his intimate association with surgeons. Medical men are apt to treat these cases as intestinal dyspepsia, neurasthenia, etc., which surgeons as the Mayos and Moynihan have shown to be organic. The surgeons have been a long time educating the medical man to favor operations upon the appendix, and now a physician is more apt to advise operation than the surgeon; frequently at consultation, operation is more strongly advised by the physician. Doctor Schmoll has referred to the acute ulcers, but these conditions are not those which have been discussed this evening. It is well known that many acute gastric and duodenal ulcers heal under treatment or even spontaneously. When these cases recur after a period of rest of six months or a year, they are not apt to disappear entirely. A marked characteristic of a chronic duodenal ulcer is its periodicity and the interval during which time the patient is free from symptoms. I have now three patients who undoubtedly have duodenal ulcer. One is getting ready for operation after several years of observation; during this period the patient has never been free from symptoms. This is the class of cases that does not get well under diet. They do not often pass into the hands of the surgeon and eventually develop carcinoma, where naturally the prognosis is exceedingly grave even when the patient is operated upon. There is only one thing that can influence the prognosis in carcinoma, and that is to operate before metaplasia has taken place, for it has been shown that between 50% and 60% of gastric carcinomata give a history of gastric ulcer. On the other hand, duodenal ulcers are not prone to develop into carcinoma, but are more frequently complicated with hemorrhage and perforation. The opinion is general now that no operations should be performed upon the stomach where an indurated base to the ulcer is not present, and that an ulcer for operation should be visible to an onlooker six or eight feet from the operating table. There is no reason for performing a gastro-enterostomy unless obstructive signs are present, and if it is done where no stenosis is demontrable, nothing is accomplished, for the anatomic opening will close and the pylorus will functionate as before.

DEMONSTRATION OF A SPLEEN.*

By WM. FLETCHER McNUTT, M. D.

Mr. M., age 46, miner by occupation, resident of Nome, Alaska, for the last seven years. He complained of a large tumor in the splenic region which he had noticed for a year and a half, frequent attacks of indigestion and vomiting, and great dyspnea. History negative, never had malaria, syphilis, typhoid, nor had he been a resident of the tropics. Six years ago he had a fall and sustained a severe blow in the splenic region. Has been an alcoholic all his adult life. Examination showed an enlarged spleen filling the left side of abdomen and extending to crest of ileum. Heart action irregular, apex displaced upward and to the left, lung normal, kidneys and liver negative, blood red cells slightly diminished, and no leucocytosis. Operation, abdomen opened over spleen, which was found to be firmly adherent over the entire surface. Breaking up these adhesions caused great hemorrhage and profound shock, which continued throughout the operation. Adhesions broken up, spleen removed, and hemorrhage controlled by packing. Patient was returned to bed in condition of shock. Lived six hours. Weight of the spleen when removed was twelve and a half pounds.

* Read before the regular meeting of the San Francisco County Medical Society, April 13, 1909.

Discussion.

Doctor J. W. Shiels: It may be of some interest for me to mention a case of splenectomy which ended fatally within twelve hours after operation. This particular case came to my office, telling me that his wife had told him that he was sick, that his wife had told him that he perspired, that his wife told him that he was breathless, and that he had dyspnea. He had found nothing to account for all these symptoms and he went on working, but because of continued urging of the wife he came to the city and here discovered that he was suffering from bleeding hemorrhoids. Upon examination we found the blood pressure somewhat high, a very large spleen, much larger after operation than even the physical signs indicated. Upon palpation the spleen was extremely free and moving with respiration quite easily, and did not seem to distend very low, the border being above the umbilicus. But upon operation we found the spleen to be enormous, as though most of its growth had been thrown up rather than descending, although from any movement during operation it was evident there were an enormous number of adhesions. The cause of death was probably due to collapse and hemorrhage. Returning to the clinical history, the spleen was extremely large, did not show any cachexia, the liver was very large, so large indeed that we hesitated in giving a diagnosis of Banti's disease; the blood count showed large lymphocytes, but a very small blood count of leucopenia. The man progressively got worse, the heart was in good shape, he showed great discomfort from the large spleen, suffered from all forms of movement severe acute pain. He was under large doses of arsenic. We put him through a long course of mercurial treatment without any result; we did all we could to get him into a better state of health. At the end of all this we confronted him with the alternative, operation. We removed one or two glands to ascertain whether he had Hodgkin's disease; having excluded that and having excluded syphilis, and having no reason to believe the man in any sense tubercular, we gave him the alternative of operation. The operation was performed, but he lived only a few hours.

Doctor H. D'Arcy Power: In the matter of diagnosis it is interesting to note that the position of the spleen varies quite frequently in these cases. I have seen two or three cases within the last two or three years; one was an enormous spleen. There was a typical splenic notch on the right side, although the spleen itself was far down toward the pelvic cavity; that case was not difficult to diagnose. A few months ago I saw a case with Doctor Morton which was interesting and to some extent puzzling. Here the whole cavity was filled with a tumor that had steadily grown for seven or eight months. The diagnosis had been made by someone of sarcoma of the kidney. The splenic notch was palpable on the right side across the mid line and down in the pelvic region. I do not know the result of the exam-

ination of the specimen, because I have not seen it since. The spleen was successfully removed.

Doctor Chas. G. Levison: I am sorry that not more has been said with reference to the diagnosis of this condition. Death following splenectomy performed for splenic anemia is frequently the result of a post-operative thrombosis of the mesenteric vessels. It seems to me that thromboses are more apt to occur in splenectomies performed for these conditions than following any other operation. In several splenectomies performed in this city, death was caused by a thrombosis of the mesenteric vessels. In a splenectomy that I performed the patient developed a thrombosis of the right innominate vein which was removed at an operation performed to remedy the condition. The patient subsequently recovered, not having suffered from the effects of the splenectomy, but the thrombosis nearly cost him his life. As far as the diagnosis of splenic tumor is concerned, I can recall one case of a Grawitz tumor where I made the diagnosis of a splcen. This diagnosis was made because of the fact that the tumor was transversed at its lower border by the transverse colon, and as we are led to believe that the colon is always in front of the kidney, I diagnosed the growth as a splenic tumor. At the autopsy the tumor was found to be an adrenal growth which had grown downwards in front of the kidney and had pushed the transverse colon below. Another tumor of interest from a diagnostic point of view was seen by me recently and was seen by a number of gentlemen none of whom were able to make a correct diagnosis. The tumor occupied the position of the spleen, but it was not closely applied to the ribs, as is always the case with splenic tumors; a notch could be felt, however. Its relation to the ribs made me hesitate to call the tumor spleen. At the autopsy a sarcoma of an undescended testicle was found.

Dr. Wm. Fitch Cheney: I would like to know a little more about the indications for operation in this case. Even admitting that we have definitely made up our minds that the tumor is an enlarged spleen, with evidences as to the nature of the splenomegaly, we do not advise operation in every case, and even when we do we try every other measure first, because the mortality is so high. We generally prefer to let a man live as long as he can without surgery. I would like to know the indications for removal in this case.

PULMONARY TUBERCULOSIS AS AFFECTED BY CERTAIN OTHER DISEASES.*

By JOHN C. KING, M. D., Banning.

While observing some thousands of cases of consumption, I have become interested in noting the apparent effect of other diseases on the pulmonary condition. The complications of tuberculosis are apt to be tubercular. Thus in connection with pre-existing pulmonary tuberculosis we find metastatic affections of other organs, typified by meningitis, pleuritis, orchitis, cold abscesses, etc. They are merely extensions of the original disease and have little or no effect upon the parent, except as they assist in destroying vital resistance. Even in the rare event of their origin from independent infection their influence over the course of the lung disease is negligible. However, this paper will not consider metastases.

Any disease may attack the victim of pulmonary tuberculosis and the question arises whether mutual reaction between diseases may occur. Our medical fathers were fond of tracing antagonisms between diseases; for instance, some of them claimed that consumption and cancer were mutually exclusive. Coley's treatment of inoperable sarcoma is a modern example. We shall not discuss the basis of these supposed antagonisms because, in most cases, the fact of their existence remains in doubt. However, we are persuaded that one disease may influence the clinical history and prognosis of another.

I have seen many cases of co-existing consumption and typhoid fever, cases from the Imperial and Coachella Valleys and from Banning. Advanced tubercular patients do not seem to easily acquire typhoid but many in the second stage do. The course of the fever seems influenced by the chest trouble. On the other hand, in every case observed by me, the pulmonary disease has gradually improved and the improvement has continued to final cure—or is so continuing (for I do not call a case of pulmonary tuberculosis "cured" until after it has remained well three years). I am not familiar with an adequate explanation of this phenomenon—simply present the facts as they have occurred in my practice. At least four of these patients were in bad condition when attacked by typhoid.

My tubercular friends have finished a fair percentage of cases of gonorrhoea. Even in otherwise well people I feel somewhat incompetent to cope with the gonococcus. In patients suffering from pulmonary tuberculosis the effort is still more discouraging. The discharge continues indefinitely or, if it clears up, recurs again and again. The mucous membrane seems especially prepared to become the abode of the germ. Acute inflammatory complications, as orchitis, are not apt to occur. The disease seems chronic and sluggish from the start. However, the point is how, if at all, does gonorrhoea affect the pulmonary conditions? All my patients have suffered from decided aggravation of pulmonary symptoms. I can recall three young men who had been doing remarkably well and who, after gonorrhoea, rapidly failed and died. This result, while not so precipitous as in the three cases referred to, has been quite constant in my experience. I have learned to look upon the acquirement of a clap as a greater misfortune to a consumptive than to others.

On the other hand, syphilis does not seem to possess such an unfortunate influence. Of course, we may find deposits of gummata in the lung, may find them co-existent with tubercular deposit. Gumma of the lung may even simulate tuberculosis. Still, tubercular syphilitics frequently recover from tuberculosis, especially when syphilitic treatment is persistently followed. It does not seem to me that syphilis when recognized and cared for, very much affects the prognosis of pulmonary tuberculosis, apart from the general anaemia and depression incident to syphilitic disease. Venereal infection is so extremely common that many, of both sexes, exhibit the complication. And yet, I do not remember having read any discussion of the effect of venereal dis-

* Read at the Thirty-Ninth Annual Meeting of the State Society, San Jose, April, 1909.

eases upon tuberculosis. It is a point worthy of attention and one that does not seem to have been other than very casually emphasized.

Nephritis is a common complication of pulmonary tuberculosis. In many instances, no doubt, the kidney inflammation is of tubercular origin. Indeed, one can with difficulty differentiate between a tubercular and non-tubercular etiology. Albumin and casts are present in either case and tubercle bacilli can only rarely be recovered from the urine. Routine examination of the urine will disclose unexpected frequency of nephritis. If the urine is not examined this condition often eludes notice. The implication is that nephritis has little effect upon the pulmonary disease. I have not found a combination of pulmonary and kidney disease to be necessarily fatal. Many patients recover who have exhibited albumin and casts in the urine. To what extent the combination reduces the percentage of recovery I am unable to state but am confident the condition of the lungs is not materially aggravated by the nephritis.

The laity place great stress upon the appearance of edema, especially of the feet, as an indication of approaching death. Undoubtedly, in tuberculosis, edema is often a terminal symptom, the result of renal insufficiency which, in turn, depends on tubercular kidney. In this discussion all such cases are eliminated.

Pneumococci are found in the sputum of three-fourths of those who come to Banning on account of pulmonary tuberculosis, sometimes very few—again very many. Nevertheless, I have never seen a case of genuine acute pneumonia among these people. Indeed, I have not seen over a dozen cases of pneumonia since coming to Banning, twenty-five years ago, and only two of them were Banning products. Consumptives here are occasionally attacked by a sub-acute form of bronco pneumonia, which stimulates the activity of the tubercular process in the lung. This occurs more frequently during seasons of epidemic influenza. The affected portion of the lung rarely clears up in toto, even when previously free from tubercular infection. When the disease disappears, which it does slowly, the tubercular infiltration will be found to have invaded additional territory. The sputum, during attacks of this character, may display a preponderance of any one of many germs, pneumo-strepto or staphylo-cocci, or Friedlander's or influenza bacilli. I found one almost pure culture of micrococcus tetragenus. Whatever the origin, these sub-acute inflammations of the lung should be treated with promptness and energy, and even then retard or prevent recovery from the tuberculosis.

Pneumonic hepatization may result in breaking down and dissemination of an old, incapsulated tubercular focus, or it may provide suitable soil for implantation of tubercle bacilli, but the mere presence of even large numbers of pneumococci in the sputum is of little significance. An attack of pleurisy is always menacing, and each recurring acute attack renders the prognosis graver. Many chest pains are insignificant as regards prognosis. Pleurodynia, intercostal neuralgia and the pain resulting from the stretching of old pleural adhesions are not necessarily evidence or cause of advancing disease in the lung. But a fresh inflammation of the pleura, usually tubercular, is nearly always followed by further involvement of the lung or by renewed activity in the already diseased portion.

Pregnancy and childbirth have always been deemed hazardous to women suffering from pulmonary tuberculosis, not per se but because such patients have been supposed to decline rapidly thereafter. Some obstetricians have even advocated emptying the uterus in order to afford the woman a chance to recover from the pulmonary disease. I have advised prevention of conception that the woman might be saved the danger of child bearing, because, to my mind, there is a vast moral difference between prevention and destruction of life. In looking over my records I find twenty-four women, in various stages of consumption, whom I have attended in confinement. Six of these died later from the pulmonary affection, three of them within a month after delivery. Their children are all living and well. Eighteen, or 75 per cent recovered, a much larger proportion than we have been led to believe possible. Of course I have had under my care a much larger number of women who have borne children subsequent to the appearance of tubercle bacilli in the sputum, but am unable to report the mortality in such cases owing to imperfect records. The results, however, have been excellent. In some instances, doubtless, the burden of child bearing has turned the scale against recovery. Still I am sure that modern hygiene and treatment have modified this particular danger. I have never felt justified in advising production of abortion because of consumption. If the mother's condition is hopeless such a course is unnecessary and criminal. If the woman may otherwise recover, the procedure is equally unnecessary and abhorent to good morals.

The idea of the extreme danger of child bearing, to such women, has been handed down to us from the fathers. They also insisted upon the heredity of the disease. The production of abortion was justified, in their eyes, as much by the latter factor as by the former. We no longer believe tuberculosis to be hereditary, except in the sense of predisposition to the disease, therefore abortion on that ground is no longer thought of. Anyhow no man would deem himself at liberty to abort life in a syphilitic woman because the child might inherit syphilis. Our conception of the pathology of tuberculosis and our method of its treatment have radically changed and, to my mind, the change has obviated the necessity of abortion. I am aware that many consider it a simple thing to dilate the uterus, remove its contents and curette thoroughly, with aseptic precaution. It is not. Aside from the morality (or immorality) of the situation, the effect on the lung of the tuberculous mother is bad. Spontaneous abortion and, particularly, abortion produced by the woman herself often, indeed usually, results in manifest aggravation of pulmonary symptoms. And this is the case where no evidence of sepsis is apparent. I believe that delivery at term is the lesser evil. The

experience of any one man can never determine any problem. However, my present view, the result of my personal experience, is exactly opposite to that held by me thirty-five to twenty years ago. I predict that in the future this form of crime will cease.

Surgical operations seem well borne by pulmonary invalids. I have never observed a deleterious effect upon the lungs following surgery upon other organs. We are warned to avoid the administration of anaesthetics in these cases. In my work both ether and the A. C. E. mixture have been used without obvious injury. I regard pulmonary tuberculosis a partial contra-indication to general anaesthesia but do so in deference to authority. My own experience teaches otherwise. Hemorrhage and shock seem as well borne as by other patients of lowered vitality. Indeed, well indicated surgery appears of decided benefit in these as in other patients. Women especially, are benefited. I have done many curettements, trachelorrhaphies, perineorrhaphies and a few major abdominal operations incident to female pelvic diseases with apparent benefit to the pulmonary condition. To me, it seems that in the presence of surgical diseases or conditions the pulmonary patient is less amenable to treatment, fails more rapidly, has less chance for recovery; and that pulmonary consumption, instead of being a contra-indication to surgical interference, is a positive indication for it when needed. Necessarily, one should use judgment. Moribund cases, even when tubercular, are not attractive to the surgeon. Advanced tuberculosis is a bar to operation in most instances, but the ordinary consumptive should never be refused surgical aid because of tuberculosis.

The simple surgery of the nose and throat is particularly essential. Using care not to operate upon hopeless cases, at least not with the intent of benefiting the chest, I make it a point to establish free nasal respiration by removal of turbinates, spurs, polypi, adenoids, tonsils or whatever may produce obstruction. When such work is needed, the chances of recovery from pulmonary tuberculosis will be greatly enhanced if it is done.

Too little attention is paid to the nose by our lung specialists. Nose and throat men are constantly clearing away obstructions, but when the patient has been pronounced tubercular they are apt to let him alone, not appearing to realize that additional indication for this work has arisen. I have seen a nose full of polypi which had passed through the hands of several prominent lung men. Two or three of them did not examine the nose and the one who did thought an operation inadvisable owing to the condition of the lung. Now the lungs were in fair shape but all the air they received came through the mouth and was of too low temperature and unfiltered. Really, the operation was doubly indicated because of the lung disease. If ever a specialist in diseases of the whole body is needed it is for the tubercular. The patient can easily spare a little of the wonderful acuteness in determining percussion resistance, providing his physician is big enough to consider other organs as well as the lungs.

Of all surgical diseases appendicitis is, perhaps, most menacing. At one time I endeavored to avoid operation, believing that co-existing pulmonary tuberculosis rendered the surgical prognosis graver and that an operation would aggravate the pulmonary disease. In many of these patients the appendicitis becomes chronic, the suffering is severe and the inflammation in the lung advances rapidly. Recovery without operation is rarer than in other patients. When, as often happens, an abscess forms and must be opened, healing is slow and fistula common. I have removed the appendix for several consumptives and have had others operate for me, and I regret every delay. Not that any patient has died from the appendicitis or from the operation but because delay has injuriously influenced the lung. I am convinced that pulmonary tuberculosis is an additional indication for early appendectomy, regardless whether the appendicitis is tubercular or otherwise. And, by the way, diagnosis of the etiology is quite impossible prior to operation. These random observations cannot be dignified by the term "paper" but, to me, they represent practical deductions from personal experience.

POLYCLINIC GATHERING.

(March 10, 1909.)

Doctor Ryfkogel: I desire to present three patients who have been operated upon for varicose veins by venous anastomosis. You are familiar with the various types of varicose veins and will remember that in some patients you see localized varices accompanied by considerable edema, but with the valves in the saphenous vein competent. In these the deep veins are at fault and operation is useless. In another type in which the deep veins are probably varicose, you will see more or less extensive dilatations at the junctions of the deep and superficial veins and with no incompetency of the saphenous valves—these cases should only be operated upon for the purpose of relieving imminent rupture or possibly to relieve the patient of an annoying deformity. In another type there are extensive varices of the superficial veins and the valves of the saphenous are incompetent and the pressure of the column of blood extending from the heart to the leg is sufficient to interfere seriously with the nutrition of the skin, producing the well-known varicose ulcer. Delbet has made an interesting experiment to show the difference in pressure in these cases between the proximal and distal end of the vein. He proved that when a patient is lying down the pressure in the proximal end was greater by 5 ccm of mercury than in the distal. When he stood the difference was 10 ccm, but in violent exercise rose to 16 ccm. This experiment demonstrates the importance of the back pressure as an etiologic factor in certain varicose veins. Trendelenberg's operation removes this back pressure by removing a segment of the vein. The saphenous vein, however, has a definite function, that of forming a by-path for the blood when the deep veins are partially closed by muscular exercise and for that reason Trendelenberg does not entirely restore the normal condition. For this reason Delbet devised the operation I have performed in both sides on one of these patients and on one side of a second. The results of the operations are entirely satisfactory. The operation consists in making a termino-lateral anastomosis of the saphenous vein into the femoral below the first one or two valves. The blood column is then sup-

ported by the valves of the femoral while the flow through the saphenous is not interrupted. In making these operations, I frequently found a large branch of the femoral running in front of the parent vein, and my associate, Dr. Castle, suggested that it would be safer, more efficient and easier to cut the vein and make a termino-terminal anastomosis at the proximal end with the distal end of the cut saphenous. It would be safer because the femoral would not be disturbed, more efficient because the upper valves of this branch would be an additional support and easier because an end to end anastomosis is easier than an end to side. This operation was accordingly done on the third patient I present, and, as you can see, the enlarged bunches of veins before present are no longer visible. This operation should only be done when the Trendelenberg test shows a sudden downrush of the blood when the patient stands and the finger pressure on the valves is removed.

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ERROR IN THE OFFICIAL MINUTES.

In some way an error appears in the Official Minutes of the House of Delegates as printed in the May Journal. In giving the list of those elected to the Committee on Public Health, the name of Dr. N. K. Foster, which appears correctly in the Secretary's written minutes, was omitted.

CHANGE OF OWNERSHIP.

Dr. Geo. E. Pettey, of Memphis, Tenn., has closed his Denver and Atlantic City Retreats and has sold his interest in the Oakland Retreat to his former associate, Dr. C. L. Case, who will continue the work at Oakland in his own name. Dr. Pettey's entire work will hereafter be done at his Memphis Retreat.

Dr. J. A. McNaughton, Los Angeles.

The information regarding death of Dr. J. A. McNaughton received and published in December, 1908, was in error. New address, 311-14 Lissner Bldg., Los Angeles.

AMERICAN PHARMACEUTICAL ASSOCIATION.

The American Pharmaceutical Association will hold its annual meeting for this year in Los Angeles, beginning August 16th. The aims and objects of this association are very closely related to and identified with medicine, and undoubtedly a number of the papers and discussions at this meeting will be of considerable interest to physicians. Mr. T. W. Jones, 310 No. Los Angeles street, Los Angeles, is the local Secretary, and will be glad to furnish any information in regard to program, etc.

THE XVIth INTERNATIONAL MEDICAL CONGRESS.

The Direction of the XVIth International Medical Congress at Budapest (from the 29th August till 4th September this year) has just begun the despatch of the Second Circular. This considerable pamphlet, besides its scientific portion, contains a detailed programme of the Congress Excursions, and all the necessary information with regard to traveling and accommodation. It may also be expressly observed here that the question of lodgings has been settled, so that every one taking part in the Congress may without difficulty find suitable accommodation. The Membership subscription is 25 crowns; wives and daughters of Members 12.50. Remittances should be sent to the Treasurer of the Congress: Professor Julius Elischer, VIII., Esterhazy-utcza 7, Budapest. It may happen that, although upwards of 20,000 copies of the programme have been despatched, the majority of our Colleagues may not be provided with the same. The Direction of the Congress therefore respectfully requests them to regard this communication as an invitation to take part in the Congress. All who may be interested will, on application to the Direction of the Congress, immediately receive a programme and all their inquiries and wishes will be most promptly attended to. Address: Office of the XVIth International Medical Congress, VIII, Esterhazy-utcza 7, Budapest.

CREDIT TO LIPPINCOTT.

Through an unfortunate error in a recent book review, "Pain," by Schmidt, was stated to have been published by Appleton; the book is from the press of J. B. Lippincott Co.

PUBLICATIONS.

Human Physiology. By John W. Ritchie, Prof. of Biology, College of William and Mary, Virginia. Published in the New-World Science Series.

This is an elementary text book of anatomy, physiology and hygiene which attempts to relate the facts taught to the students' environment and show their relation to the fundamental causes of disease. The subject is developed along elemental lines with sufficient breadth to show the true relation of physiology to the daily life both individual and collective. Health is essential to happiness, hence an elemental text should teach with directness the reasons for the rules of health. This text develops the subject from the structure and function of the cell, indicates some points of contact with other lines of nature study, and shows the part played by bacteria, protozoa, alcohol, tobacco, dietetic and other errors in the production of disease. A chapter treats accidents and first aid to the injured. The reasons for public sanitary measures and preventive medicine are made clear in certain important instances. Each chapter closes with a summary and review questions.

F. W.

"Intestinal Auto-Intoxication." Combe. States.

Combe's "Auto-Intoxication," translated by States, is a book worthy of a discriminating perusal. The author has made an exhaustive collection of the literature extant on digestion, physiological and pathological, but his commentaries have not been so critical as they might have been. The translator might have made a more happy choice in some of the terms which he has employed.

The clinical portion of the work which is of especial interest to the practicing physician is not nearly so illuminating as one could wish. In days not so far gone, the stock phrases, when one was at a loss for a diagnosis, were "a touch of malaria" or "biliousness," now one would be tempted, in view of Combe's descriptions, to use "auto-intoxication" with the same easy grace.

The methods of diagnosis of this condition have undoubtedly improved—and they are all mentioned by the author. However, one could wish for a fuller explanation of technique and a more forcible demonstration of their utility. For example—methylene blue—as a test for hepatic insufficiency. Possibly the citation of a few cases with the diagnostic methods employed and the treatment with results would make the work more useful from a practical standpoint.

Organotherapy has received too little mention. While we are aware that hypothyroidism may contribute to auto-intoxication, nevertheless a description of the type of case to be aided by thyroid treatment would not be amiss. The portion devoted to therapy in general deserves close attention. The choice of cathartics and their results, and the properties and actions of the various intestinal antiseptics indicates careful study. The dietaries and the treatments by physical measures will be found very helpful. There is much to be learned from this work and we take pleasure is recommending it.

J. B. FRANKENHEIMER, M. D.

High Frequency Current. By F. F. Strong, M. D., New York. Rebman & Co., Publishers. Price, $3.00.

The technical portion of this book is well written, and undoubtedly the writer has the subject well in hand, but the overwhelming optimism in the therapeutic results of high frequency current as displayed in the therapeutic portion can not but call for condemnation. For example, the following paragraphs:

"Even where serious disturbance of the vasomotor system is present, such as the initial chill of lobar pneumonia, prompt and vigorous use of the Tesla current applied either by the effluve or wave current technic, will, if persistently applied, destroy the toxemia, break up the superficial chill and fever and actually abort the disease, the patient breaking out in a profuse perspiration, and the pulmonary congestion changing its character so that a mild catarrhal inflammation replaces the virulent pneumonic infection.

"In acute cystitis complicating gonorrheal urethritis a red vacuum electrode shaped like an ordinary sound is inserted in the bladder, while the red vacuum condensor is applied to the surface over the bladder.

"Epithelioma of the cervix uteri may be successfully treated by the double vacuum method recently devised by the writer. Cancer of the body of the uterus may be similarly treated substituting X-Ray condensor electrode for the low red vacuum electrode which is applied to the suprapubic region."

And so on ad infinitum from pulmonary tuberculosis to hemorrhoids, from tinea tonsuras to ingrown toe nails, all are treated more or less successfully, chiefly more. With such publications extant it is not surprising that the average physician and the average patient look upon all lines of electrical treatment with scepticism.

Pure Milk and the Public Health. A manual of milk and dairy inspection; by Archibald Robinson Ward, B. S. A., D. V. M., with two chapters by Myer Edward Jaffa, M. S. Ithaca, N. Y., Taylor & Carpenter.

Few men are better fitted to write a book dealing with milk in its relation to public health than Dr. A. R. Ward, Assistant Professor in the University of California, and few books are more needed at this time of sanitation and sanitarians than the one covering this general subject which he has given us.

There is no lack of books on the special chemistry and bacteriology of milk, and the various divisions of this many headed subject have been thoroughly treated in a voluminous and widely scattered literature but I know of no other volume that offers as much of value in a single publication or where one who is interested in this subject of milk, whether as health officer, sanitarian, milk commissioner or progressive dairyman will find so many puzzling questions answered by an original and practical observer.

And herein lies its chief value—that it is the simple record of the personal experience of an original investigator. Whatever its faults may be from a literary standpoint,—and it makes no claim to being a rhetorical model—the book will make a lasting place for itself for its humanitarian value—for the work it has done in bringing again and more forcibly before the people the importance of pure and clean milk.

In the chapter on Bovine Tuberculosis the author has presented a resume of the subject that all physicians will do well to read, particularly those who are unacquainted with the important bearing this subject has upon public health.

The mistakes usually made by those who are inclined to belittle the work of modern sanitarians along the line of the eradication of bovine tuberculosis are three, viz: that it is doubtful if bovine tuberculosis is ever transmitted to human subjects—that the tuberculin test is conclusive in revealing the presence of this disease in cattle, and that pasteurization of milk is certain to remove any possible danger that may be present due to pathogenic organisms—that these beliefs are fallacious no one after reading this book can remain unconvinced.

Dr. Ward has been intimately associated with the production of pure milk in California as bacteriologist and veterinarian to the Milk Commission of the San Francisco County Medical Society and to the Oakland Milk Commission. In his capacity as examining expert he has been able to follow for years the conduct of certified herds, and the record of his experience in the tuberculin testing of cows and the efficacy of the test when properly performed is one that professional or commercial obstructionists cannot afford to ignore.

In the matter of the evils of the pasteurization of milk as at present practiced the author is not as emphatic as I should wish. Most of us remember when the sterilization and the pasteurization of milk was hailed as the remedy for the frightful infantile mortality then existing, and the spectacular alteration of the death rate which followed the substitution of the cooked for the uncooked product. The reaction which followed the use of heated milk when it became evident that pasteurization was a poor makeshift at best is of recent origin while the ultimate and inevitable solution—the substitution of a clean for a filthy substance—is not yet fully accepted even by the profession. The medical mind, sad to say, like all ponderous bodies, moves slowly and likely in the solution of this question as in some others, the lay intelligence will get there first.

Dr. Ward rightly gives the credit for the most practical handling of the milk problem at present to the so-called Washington, or three class plan—viz: certified, inspected and pasteurized milk. The latter, including all milk not produced under sanitary conditions, pasteurized under direct oversight of the health authorities.

If it were true that milk merchants would pasteurize by the slow or interrupted process advocated by Dr. Rosenau and would handle the milk properly iced until its early delivery this plan would undoubtedly be worthy of further discussion, but this they almost unanimously refuse to do.

By heating to an indefinite temperature in a continuous flow machine for an insignificant period of time they succeed in destroying most of the adult acid forming germs leaving many pathogenic forms and their toxins unharmed, as well as those bacteria which act upon the proteid rather than the carbohydrate elements. This process is very effective in destroying the enzymes and protective antibodies as well as the more numerous, but harmless, sugar splitting forms so that the organisms that are left may grow unhindered as soon as the milk is brought to a favorable temperature. However, the so-called pasteurized milk will bear rough usage longer without suffering any evident change and the commercial interests are satisfied.

Caldwell and Sherman in the Journal of Biological Chemistry have recently (Oct., 1908) shown that rapid high temperature pasteurization is inefficient in destroying the peptonizing or proteid splitting group of bacteria and that these in the absence of the acid forming variety grow more luxuriantly after pasteurization than before, more ammonia being present in pasteurized samples than in sour, unheated milk.

In view of these facts, I do not see how sanitarians can do otherwise than to condemn utterly the present practice of making a dirty fluid more presentable by partial pasteurization, notwithstanding that ever ready and watchful bugbear of "Milk Famine." Famine of what, in Heaven's name! Those who have seen the conditions existing in some of the smaller outlying dairies—and large ones, too for that matter,—will agree with me that a famine of their product is one that can be viewed without terror and borne with a large measure of fortitude.

The subject of Medical Milk Commissions is treated satisfactorily although not so fully as the subject warrants considering that practically all the milk now produced under sanitary conditions in the United States is that which is marketed under the supervision of these bodies. However, those medical societies which are contemplating the establishment of milk commissions, and let us hope they are many, will now find abundant information along constructive lines in the transactions of the American Association of Milk Commissions.

It is not to be expected that the two chapters on milk analysis and milk adulteration contributed by Dr. M. Jaffa, Professor in the University of California, will take the place of the volumes written upon these special subjects. They contain, however, much of value not found in the larger works.

The record of the author's personal experience, well told, forms the basis of advice in the conduct of tests and the interpretation of results. They are a distinct addition to the literature on these subjects.

The press work is very attractive and the index is comprehensive and accurate. A possible omission is a list of authors quoted which would be a help in looking up the literature.

LEWIS SAYRE MACE.

Roentgen Rays and Electro-Therapeutics with Chapters on Radium and Phototherapy. By Mihran Krikor Kassabian. J. B. Lippincott Company, Publishers, Philadelphia and London; 32 and 545 pages.

The author gives a very comprehensive compilation of the various forms of electrical energy and their use for medical purposes. The first portion of the work, but the shorter one, deals with magnetism and electricity in general, their measurements and definitions and their applications as static, galvanic, faradic, high frequency discharges. With a great number of illustrations he shows the different instruments and their use. The second, and by far the most important part of the book, is devoted to the X-Rays, the third part to Radium and Phototherapy.

Entirely different from the standard German work by Doctor Albers-Schoenberg, whose translation into the English language would be of greatest merit and very desirable, this handbook does not give the opinion of the author only, but a review of the opinion of very many other people and, unfortunately, a great number of theories which have been corrected by the rapid progress of the latest years. This is especially true about the application of the galvanic and faradic currents in chronic diseases. The use of the wall plate has been entirely abandoned or greatly limited in a great number of cases. In a more critical way K. deals with the application of the high frequency rays which have found such great friends in France, but far less in Germany and other countries.

The value of the X-Rays as a therapeutic agent, though thoroughly established in epithelioma, carcinoma and sarcoma, seems to me very doubtful in many cutaneous affections like psoriasis, eczema, lupus, keloid, tuberculosis, etc., in all of which the author has compiled in a very extensive manner from the medical journals scattered reports of over-optimistic observers which have not been verified by later experience. A textbook is not supposed to be a collection of all that has been written somewhere on the subject treated, but rather the fruit of a very careful selection and elimination. The beginner who uses his textbook for his information will gain the impression that almost every human ailment can be successfully treated by some electric means, only to be greatly disappointed when he goes to work.

The same must be said especially about the clinical application of the X-Rays to diseases and tumors of the soft tissues. With the instruments of to-day, the differentiation in densities, especially in the skull and trunk, is not far enough advanced (and perhaps never will be) to enable us to make diagnoses of myomata, fibromata, etc. The skill of the clinician and pathologist must be depended upon in those cases.

What the worker in the new field of Roentgenology feels very deeply, is the lack of proper knowledge as to what can be done by the new method and what are its limits. K.'s book, I am afraid, will not improve upon the proper limitation of the field, and if ever, here it becomes true that less would have been more. Even in the description of instruments it will be far more useful not to show illustrations of half a dozen tubes and interrupters but to have reliable authority as to which is the best of them for the time being. The lack of system and critics, and the aim to give within the scope of a textbook all the details of the various articles makes it very hard to select the good grains out of the vast amount of shells, and has caused a great number of repetitions and commonplaces like the following: "When a patient comes for treatment, it is necessary to ascertain the nature of the disease, before deciding upon the kind of treatment to be instituted" (page 54).

The worst feature of the whole book is the index. If you want to see the author's suggestions as to an examination of the knee joint, you of course will expect to find something under "knee," but you will be badly mistaken. You will have to look up three pages under the head "X-Rays," and with patience and perseverance you will find X-Rays as a diagnostic agent in diseases of the joints (pp. 282-285), or X-Rays as a diagnostic agent in fractures and dislocations (pp. 258-270), and especially when you are in a hurry it will be a great comfort to you that you might find something on the subject by reading over sixteen pages in your textbook.

We certainly appreciate the energy and industry of the author displayed in the collection of a vast amount of material, but we are strongly under the impression that he has stopped where he should have only begun.

The rapid development of Roentgenology within the last year, the introduction of the multiple anode, Wehnelt interrupter for instantaneous work, the perfection of the alternating transformers with synchron current rectifiers by Koch, and their improvement by Snook, the introduction of greatly improved mercury interrupters has entirely revolutionized the field, and if a new edition of the work should become necessary, the author will do well to do away with all the ballast he is carrying now and to take his course more straightforward towards the destination. The illustrations contained in the book, so far as they are reproductions of X-Ray plates, need only to be compared with those of the "Forschritte des Roentgennesens" and other German papers to show the absolute insufficiency of the so-called "half-tone" process, which has been used by the publisher of K's book. The plates may have been perfect, but the reproductions give but a very faint idea of the original and its merits.

COUNTY SOCIETIES

SAN JOAQUIN COUNTY MEDICAL SOCIETY.

Stockton, Cal., April 30, 1909.

The regular monthly meeting of the San Joaquin County Medical Society met at the home of Dr. Peterson with the President, Dr. Hull, in the chair, and the following members present: Drs. Hull, Hoisholt, Langdon, Tower, H. N. Cross, Sanderson, Hopkins, Smyth, Fitzgerald, Peterson, Harry, Walker and E. A. Arthur.

The minutes of the last regular and call meeting of the Society were read and approved. The committee on ethics reported that their attention had been called to the fact that Dr. Blackmun accepted the position as examiner for the New York Life Insurance Co. without the company agreeing to the $5.00 rate. The committee thereupon called upon Dr. Blackmun, explaining the position of the Society in the matter, the doctor refusing to resign as examiner, but instead exhibited a letter from the local agent who personally guaranteed $5.00 for each examination and also promising that he would resign in favor of Dr. Fitzgerald if he, Dr. Fitzgerald, would take the examination at $3.00. This being unsatisfactory to the committee, they moved that Dr. Blackmun be expelled from the Society, and that no member of this Society be allowed to counsel with the doctor under penalty of expulsion from the Society. Carried.

The committee on incorporation reported favorably. It was moved, seconded and carried that the action on the subject of incorporation be postponed until the next regular meeting of the Society and that the Secretary inform all members the object of the meeting and request their attendance. Dr. Arthur reported that he had secured the signature of most of the members of the Society to the resolution lately presented the Board of Supervisors and it was again presented to the said board. Moved that a committee of five be appointed to confer with the Board of Supervisors and obscure the above resolution. Carried. The Chair appointed the following: Drs. Arthur, Hoisholt, Harry, Fitzgerald and Harbert.

A communication was read from Dr. Jones regarding the movement for the prevention of venereal diseases. It was moved that the communication be laid upon the table for further action. Carried.

Dr. Tower read a paper on Trichinosis, giving the history of four cases in detail, which was found to be one of the most interesting papers the Society has recently listened to. The doctor also exhibited microscopical slides showing the Spirilla trichinosis.

It was moved that the Chair appoint a committee of three to formulate a letter and also arrange, if possible, to appear before the various labor organizations regarding members of such organizations calling any physician who accepts practice for a fee less than that adopted by the San Joaquin County Medical Society. Carried. The Chair appointed the following: Drs. Walker, Cross and Peterson.

It was moved and seconded that the President and Secretary be authorized to consult with the merchants' association regarding the suggestion of an ordinance prohibiting the practice of itinerant physicians. Carried.

B. F. WALKER, Secretary.

SONOMA COUNTY.

The Sonoma County Medical Society met in Dr. Huffman's office, Healdsburg, May 7th, '09. The attendance was small but we had a good meeting, and elected Drs. Frederick Leix, Sonoma, and Marion B. McAulay, Petaluma, members of our Society. We have 51 members. Dr. J. Walter Seawell exhibited a specimen of carcinoma of sigmoid flexure, giving history of case; also related the birth of two children in his practice within a month of each other interuteroampution of arm at elbow and armless child. Neither child lived.

Dr. W. J. Kerr related the case of tapeworm in stomach of a 19-year-old young lady that was vomited up, but the girl failed in health, vomiting so often—finally after about six weeks she died of exhaustion.

G. W. MALLORY, Secretary.

SONOMA COUNTY.

The regular meeting of the Sonoma County Medical Society for June was held Friday, June 4th, at the County Hospital, and the following were present:

Dr. W. J. Kerr, President, presiding; Drs. G. W. Mallory, Secretary; C. H. Thompson, F. O. Pryor, E. M. Yates, J. W. Scamell, S. S. Bogle, J. W. Clark and P. A. Meneray.

Visitors: Drs. Ethan H. Smith, San Francisco, and E. E. Briggs, Watsonville.

Dr. S. S. Bogle showed a case, a man 45 years old, who had had an omental hernia. Dr. Bogle had removed about 100 cubic inches of the thickened omentum, and the patient was about well in one month afterwards. Now the patient says at time he feels a little pain about the pelvis, yet he works all the time. Dr. Bogle took us through the wards. Dr. Ethan H. Smith of San Francisco was introduced and exhibited a patient four years old, girl, double congenital dislocation of hips, also Radiographs, before and after operation, by the Hofper method. The child had good use of its legs, the head is in the acetabula on both sides. Dr. Smith gave an excellent talk on the operation and also on the subject. The next meeting will be in Sebastopol, July 2, 1909.

G. W. MALLORY, Secretary.

NOTICE.

We are going to try to issue the Register and Directory in July, this year. Will you please send in your own or any other change of address known to you. The accuracy of the work largely depends upon the co-operation of the members.

CHANGE OF ADDRESS.

Phelan, Henry Du R., from Fort Baker, Sausalito, Calif., to Fort Shafter, Honolulu, H. I.

Weston, Wm. H., from 315 W. 6th St., Los Angeles, to ———?

Dickinson, J. C., from 2316 So. 7th St. Los Angeles, to ———?

Besson, G. A., from 978 Ellis to 826 Eddy, S. F.

de Faria, J. B., from 1096 Clay St., S. F., to ——?

Mulligan, A. P., from 744 Devisadero to ———?

Harris, B. Y., from 135 Stockton to Whitney Bldg., S. F.

Sanborn, F. G., Pacific Bldg., S. F.

Bloch, H. I., from 1961 Pine to 323 Geary St., S. F.

Gillihan, Allen F., from Shattuck Ave. and Allston Way to Acheson Bldg., Berkeley.

Hardin, A. E., from Grass Valley to Nevada City, Cal.

Selzer, Edward, from San Jose to 518—9th St., Oakland, Cal.

Vanderpool, Mary F., Hayward, Cal.

Oliver, A. S., from 47 Santa Clara St. to 61 N 2nd, San Jose, Cal.

Johansen, E. A., from 138 Sutter to 133 Geary, S. F.

Berges, Edward R., from S. F. to 4800 E 14th St., Oakland, Cal.

Evans, Geo. H., from 2713 Sacramento to 133 Geary St., S. F.

Martindale, Jno. H., from Hotel Leighton, Los Angeles, to Hotel Netherlands, Los Angeles, Cal.

Simon, Grace, from address unknown to 754 Sacramento St., S. F.

Dudley, W. H., from H. W. Hellman Bldg. to Exchange Bldg., Los Angeles.

Todd, C. E., from Santa Barbara to Monrovia, Cal.

Whitney, Mary, from address unknown to Redondo, Cal.

Hyde, L. D., from Sacramento to 135 Stockton, S. F.

Zahn, L. Paul, from Douglas Bldg. to 1841 Monticello Ave., Los Angeles.

Berg, Adolph, from 525 Montgomery Ave. to 1462 Devisadero St., S. F.

Onesti, S. J., from 1556 Green to 271 Montgomery Ave., S. F.

Minnaker, A. J., 146 Grant Ave., S. F..

Myers, M. C., from Oroville, Cal., to Reno, Nev.

Winterberg, W. H., from 1925 Broadway to 323 Geary, S. F.

Brooks, Ezra, from Bodie to Holtville (Imperial County), Cal.

Pritchard, W. E., from 218 So. Broadway to Grosse Bldg., Los Angeles.

Taylor, Chas. S., from Douglas Bldg. to Wright & Callender Bldg., Los Angeles.

Lindsey, Philip S., from 439—3rd to Third and Oregon Sts., Santa Monica.

Huntoon, A. F., from Union Trust Bldg. to San Fernando Bldg., Los Angeles.

Palmer, W. H., from 930 W. 37th St. to 920 W. 35th Place, Los Angeles.

Janss, Edw., from 811 So. Beacon to Pacific Elec. Bldg., Los Angeles.

Wade, W. L., from 314 W. 4th St. to 4th and Hill Sts., Los Angeles.

Sawyer, E. O., from 2211 Cambridge to 2672 West Pico St., Los Angeles.

Wheeler, A. E., from Moskegon Bldg. to Bradbury Bldg., Los Angeles.

Wood, Frank L., from 26 Pine Ave. to Long Beach Bank Bldg., Long Beach, Cal.

Loper, Asbury N., from Fresno to Dinuba, Cal.

Hawkes, W. J., from Bradbury Bldg., to Wright & Callender Bldg., Los Angeles.

Manning, Edw. C., from Potomac Bldg. to 213 So. Broadway, Los Angeles.

Henderson, Edw., from address unknown to Union Blk., Pomona, Cal.

Thomas, Frank W., from College Ave. to Howard and 5th Ave. Claremont, Los Angeles, Cal.

Newman, W. H., from 337 Daisy St. to City Nat'l. Bank Bldg., Long Beach.

McConkey, Thos. G., from 986 Ellis, to 1156 Sutter st.

Larsen, Julian P., from Children's Hospital, to 240 Dolores st., San Francisco.

Burrows, J. R., from Lane Hospital, to 1236 6th ave., San Francisco.

Sawyer, H. C., from 115 Haight, to 246 Powell st., San Francisco.

Leib, Thos. N., from 2421 Broderick, to 424 Broderick st., San Francisco.

Lewis, J. C., from 1866 Golden Gate ave., to 1104 Devisadero.

Hartman, Emily, from Vallejo, to 1572 La Loma ave., Berkeley, Cal.

Robertson, H. M., from Riverside, to 1317 N. Main st., Santa Ana, Calif.

Pickett, J. C., from 1380 Sutter, to 133 Geary st., San Francisco.

Garceau, A. E., from 1380 Sutter, to 133 Geary st., San Francisco.

Philip, John H., from 2410 Steiner st., to 133 Geary st.

Thomas, H. G., from 1111 Washington, Oakland, to First National Bank Bldg., Oakland.

Walsh, Frank D., from Loyalton, to Bryto Bldg., Sacramento, Cal.

Chiapella, Jos. D., from French Camp to Davis, Cal.

McKellar, Jas. H., from 307 E. Colorado st., to Chamber of Commerce Bldg., Pasadena, Cal.

Alden, Eliot, from Todsworth Bldg., Pasadena, to 461 E. Colorado st., Pasadena.

McCue, Jas. E., from Oakland, to 707 E. 4th st., San Rafael, Cal.

Westerberg, Fre'k., from Mill Valley, to 268 Market st., San Francisco.

Ewer, E. N., from 1111 Washington st., Oakland, to First National Bank Bldg., Oakland.

Pascoe, Elmer R., from County Hospital., to Wright and Callender Bldg., Los Angeles.

Putnam, V. E., from 901A Haight, to 290 Devisadero st., San Francisco.

Bowser, J. C. N., from Ontario, Cal., to ———?

Maston, B. B., Union Savings Bank Bldg., Oakland.

Terry, Sam'l. P., from San Francisco to 1834 San Jose ave., Alameda, Cal.

Lowman, C. Le Roy, from Calif. Hosp. Los Angeles, to 430 So. Broadway, Los Angeles.

Rogers, Frances L., Nat'l. Bank Bldg., Long Beach, Cal.

Wright, Clifford A., from County Hospital, Los Angeles, to 213 So. Broadway, Los Angeles.

Smith, T. H., from 245 E. Holt to 161 W. 2nd St., Pomona, Cal.

Shaffner, Thos. L., from Bryson Bldg. to San Fernando Bldg., Los Angeles.

Randall, T. J., from 452½ So. Broadway to Lankershim Bldg., Los Angeles.

McArthur, Duncan D., from 959 So. Figueroa to Abbottsford Inn, 8th and Hope Sts., Los Angeles.

Mathias, E. N., from Laughlin Bldg. to Security Bldg., Los Angeles.

Voorhees, H. M., from 2202 W. 20th St. to Pacific Elec. Bldg., Los Angeles.

Up de Graff, T. S., from Dodsworth Bldg. to Chamber of Commerce, Pasadena, Cal.

True, Herbert F., from Auditorium Bldg. to Lissner Bldg., Los Angeles.

Rooney, H. M., from Fay Bldg., to Auditorium Bldg., Los Angeles.

McNaughton, J. A., from Citizens' Nat'l. Bank Bldg. to Lissner Bldg., Los Angeles.

Pearce, Lewis A., from Bank Bldg. to Bixby-Heartnell Bldg., Long Beach, Cal.

Kierneff, Benj. Franklin, 1936 Magnolia Ave., Los Angeles, Cal.

Kiger, Wm. H., from Ocean Park to Wright & Callender Bldg., Los Angeles.

Sassella, B., from 223 N. Spring St. to Temple Blk., Los Angeles.

Lochman, Wm. H., 552 So. Broadway, Los Angeles.

Stiles, W. H., from 5th St. to 741—4th St., San Bernardino.

Cameron, H. M. D., from Reno, Nev., to 530 K St., Sacramento, Cal.

Murray, H. W., B. O. Kendall Bldg., Pasadena, Cal.

Woodroffe, Helen L. H., from Laughlin Bldg. to Grant Bldg., Los Angeles.

Vaughan, Edwin L., from Frost Bldg. to San Fernando Bldg., Los Angeles.

Boyer, J. Silas, from 829 J St. to 920—6th St., Sacramento, Cal.

Koford, Henning, from 1103 Broadway to 1st Nat'l. Bank Bldg., Oakland.

Gray, Frank P., from 2407 Sacramento St. to 2401 Buchanan St., S. F.

Powers, Carl L., from 1694 Post St. to 323 Geary (Elkan-Gunst Bldg.), S. F.

Parsegan, J. H., from 1529 Sutter to 323 Geary St., S. F.

Colburn, J. R., Delta Bldg., Los Angeles.

Whitlock, R. G., to Pacific Elec. Bldg., Los A.

MacDonald, Geo. C., 1141 Geary St., S. F.

Southard, Wm. F., from 1424 Gough St. to Phelan Bldg., S. F.

French, Chas. E., from 1178 Eddy to Phelan Bldg., S. F.

Young, W. S. S., 623 Louisiana St., Vallejo, Cal.

Reynolds, R. G., Jr., from Porter Bldg., San Jose, to Nevada Blk., Palo Alto.

Wortmann, Heinrich, from 1480 Church to 1507 Fillmore, S. F.

Frasse, Irvin N., (permanent address), Los Angeles, Cal.

Wilson, Thos. J., Hoops Blk., Pomona, Cal.

Barney, Thos. R., 1219 Broadway, Oakland, Cal.

Canac-Marquis, from 1380 Sutter to 323 Geary, S. F.

Wood, Geo. A., from 1458 Sutter to 135 Stockton, S. F.

Wiborn, J. A., from Ortmann Bldg. to 391 Sutter St., S. F.

Dunn, W. L., from 1065 Washington to Union Sav. Bank Bldg., Oakland.

Hunt, R. H., from 1460 Hayes to 1248—1st Ave. (Sunset District), S. F.

Maher, Thos. D., from 3545 23d St. to Anglo Bldg. (16th & Mission), S. F.

Shickle, Chas., from 251 S. Union Ave. to Grant Bldg., Los Angeles.

Squire, H. A., from 814 Francisco, Los Angeles, to Lankershim Bldg., Los Angeles.

Hindman, S. J., Inglewood, Cal.

Smith, E. H., from Hanford to Corona, Cal.

Harker, Geo. A., from S. F. to 1st Nat'l. Bank Bldg., Oakland.

Franklin, Blake, from 115 Plymouth Ave. to 29 Broad St., S. F.

Kirkpatrick, J. H., from Grant Bldg., Los Angeles, to Bradbury Bldg., Los Angeles.

Young, L. H., from 2327 Market to 2598 San Bruno Ave., San Francisco.

Moore, J. Ross, from Pacific Mutual Bldg., Los Angeles, to Fay Bldg., Los Angeles.

Corey, J. W., from address unknown to Compton, Cal.

Lavy, Wm. S., Stone Blk., Gridley (Butte County, Cal).

Trueblood, W. E., from Arbuckle to 2213 Haste St., Berkeley, Cal.

Molgaard, Jens, from 302 Church to 833 Market (Commercial Bldg.), S. F.

Holt, Wm. L., from Santa Barbara to Banning, Cal.

Cowles, C. D., Jr., from Los Angeles, to Zamboanga, P. I. (U. S. Med. Service).

Sampson, May H., from Alcatraz Bldg. to Wright Bldg., Berkeley, Cal.

Dodsworth, Robt. M., from 2730 Derby to Berkeley Nat'l Bank Bldg.

Putnam, C. B., from 702 I st., Sacramento, to 518 9th st., Oakland.

Campbell, G. E., from Stanton Bldg., to Chamber of Commerce Bldg., Pasadena, Cal.

NEW MEMBERS.

Dodds, Thos. G., Oakland, Cal.
Leix, Fred'k, Sonoma, Cal.
McAuley, Marion B., Petaluma, Cal
Hollingsworth, R. B., Jr., Fresno
Hopkins, Howard H., Fresno.
Hopkins, Grace Thorne, Fresno.
Reynolds, Louis G., Sacramento.
Martin, H. G., San Francisco.
Kavanagh, Jos. J., San Francisco.
Hanson, G. F., San Francisco.
Howe, Louis P., San Francisco.
Fleischner, E. C., San Francisco.
Raymond, Alex., San Francisco.
Luttrell, Peter Harrison, San Francisco.
Lewitt, Fred'k C., San Francisco.
Bricca, C. R., San Francisco.
Dickson, E. C., San Francisco.
Chiapella, Jos. D., Davis (Yolo Co.), Cal.
Woods, E. H., Riverside, Cal.
Southworth, H. E., Los Angeles, Cal.

DEATHS.

Payton, J. E., Redlands, Cal.
Wall, Wm. B., Santa Ana, Cal.
Nellis, J. G., Irvington, Cal.
Burgess, Oscar O., San Francisco.
Taylor, Oscar N., San Francisco.
Wightman, Wm. M., formerly of Angel Island Quarantine Station, died in Guayaquil, Ecuador, May 16, 1909.
Putzer, Geo. C., Los Angeles, Cal.
Watts, Plimy R., Sacramento, Cal.
Gray, Thos. J., Berkeley, Cal.